The American Journal of

CLINICAL MEDICINE

Dependable Therapeutic Fact for Daily Use

AUGUST MCMXVIII

DO we appreciate the priceless blessings of health? Do we realize the joy of being able to do and to go without hindrance from physical debility? The zest for the day's work granted by a night's refreshing sleep? The comfort of being able to eat with relish and to digest the food without being made conscious, painfully, of digestive disturbances? The delight and well being that come from a body not incapacitated by disease?

It is the physician's duty to relieve suffering and to restore health when it has been disturbed. It is his privilege to prevent disease by teaching the laws of health and of its preservation. Do we as physicians live up to our duties and privileges?

DR. GEORGE F. BUTLER

Whose practical articles, and whose cheerful and stimulating talks "Among Friends" always are of great help to many.

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Speaking of Butler

DR. GEORGE F. BUTLER is a many-sided man. His ability as a diagnostician began to be known some twenty years ago and in this field, especially, he has of late been conceded a leading place. He has shown remarkable acuity in handling neurasthenic cases; as a consultant in treatment as well as in diagnosis, he is much sought; in preventive medicine, he has been and is aggressively active; and his conception of the human organism, as, most emphatically, including its psychology, although new in its bearings, is strictly within the range of ethics and has justified itself in practice.

Moreover, outside all these things, he is a writer of rare excellence, a fountain of pregnant epigram, a lecturer on many subjects, and a poet of fine vision and vivid style. The readers of this journal who have seen his contributions to these pages need be told little about him in that aspect.

All this is brought to mind just now by the announcement of Doctor Butler's appointment as medical director and physician in charge of the North Shore Health Resort of Winnetka, Illinois, on the shore of Lake Michigan about twenty miles north of Chicago. For several years past, he has been at the head of Mudlavia, at Kramer, Indiana. His success there, though the range of treatment was narrow, by reason of the disorders amenable to the influence of the mud baths, was singularly high, quite high enough to command wide recognition. The administration of such a place involves the exercise of qualities not usually combined in a single person. In fact, it calls for a multiple personality; a physician, a man of the world, a scholar, a man of insight, a man whose manner, whose aura must attract and hold respect and friendship —for, he must meet all sorts and conditions, understanding all, or he must fail.

The North Shore Health Resort to which Doctor Butler has been called is one of the few really great institutions where success has been built upon sound ethical principles. Its reputation shines with the kindly luster of much good done to many people who had slipped into the shadows of unease and have been led back to their normality. It is a beautiful place, a noble group of buildings

standing among old trees, on high ground overlooking Lake Michigan.

It is described by one who has been there as having "not the slightest suggestion of a hospital, but, on the contrary, an atmosphere of cheery quiet, more like a home on a great estate, with its spacious rooms, its library, its places of recreation, its broad lawns, and the always changing moods of the lake that splashes on its beach."

It is gratifying to know that the medical department of this institution has passed into the charge of so well-tried, so peculiarly fitted a physician and executive. Not alone Doctor Butler, but, the entire medical profession as also those countless many who will come under his care in this new post, may be congratulated.

Doctor Butler informs us that he will enter upon his new duties on September first. Our cordial good wishes go with him and, we are certain, those of all readers of CLINICAL MEDICINE.

You may not be able to fight, but you can save and buy War Savings Stamps.

THE MEDICAL WORK OF THE WAR

A report of the chairman of the Committee on Medicine and Sanitation, appointed by the Advisory Commission of the National Council of Defense, has recently been published and bears witness to the tremendous amount of work that has been accomplished in the effort to aid in the conduct of the war, not only in preparing the active man-power, but, also, in taking care of the injured and in restoring them to usefulness.

The various committees and commissions engaged in this monumental work are numerous, and it may be difficult for the uninitiated to find their way through them; so, we will try to trace the work from the fountainhead through its various ramifications.

First of all, there is the Council of National Defense, consisting of the Secretaries of War, of the Navy, of the Interior, of Agriculture, of Commerce, and of Labor. This Council of National Defense has attached to it the Advisory Commission, one member of which has supervision of everything pertaining to medicine and surgery, including general sanitation. The chairman of the Committee of Medicine and Sanitation of the Advisory Commission was authorized by the Council of National Defense to organize the General Medical Board, for the purpose of aiding in the enormous expansion of the various government bureaus and coordinating with their work the resources and talent of the civilian medical profession. The General Medical Board represents the civilian population in its relation to the four government administrative offices of the surgeons-general of the Army, the Navy, the Public-Health Service, and the Red Cross, and through it the organization, for war, of the medical profession is being carried out.

The Executive Committee of the General Medical Board is composed of Dr. Franklin Martin, as chairman, Surgeons-General Wm. C. Gorgas of the Army, Wm. C. Braisted of the Navy, Rupert Blue of the Public-Health Service, Dr. Wm. J. Mayo, Dr. Victor C. Vaughan, Dr. Wm. H. Welch, Dr. F. F. Simpson, and Rear Admiral Cary T. Grayson. In addition to these, many others of the leading physicians and surgeons of the country are appointed to the board.

The General Medical Board now consists of 77 members, 22 of whom are on active duty in Washington. Such medical problems as develop from the activities of its various committees are considered at the monthly meetings of the board and referred for action, if deemed advisable, to the executive committee. If the recommendations of a committee are approved by the executive committee, they are laid before the advisory commission, or the Council of National Defense, or both, by the chairman. If indorsed, the recommendations for final working-out are referred back to the General Medical Board or distributed in the way of information to those in authority in the bureaus concerned. The General Medical Board cooperates with all state and county communities and through them with the various sectional medical societies.

Upon looking through the report concerning the work accomplished by the General Medical Board through its various committees, one can not but be impressed with the many activities undertaken for the purpose of furthering and facilitating the work of the American nation in this war, and at the same time with the aim of rendering the unavoidable injuries as little permanent and as little harmful as possible.

It would lead us too far to enter into details concerning these activities, but, we believe that an enumeration of the special committees may arouse our readers' interest, inducing them to ask for a copy of this report, which was published on April 1 of this year.

The various committees of the general board are as follows: for children's welfare; for civilian cooperation in combating venereal disease; for dentistry; for editorial activity (mainly in publishing textbooks, epitomizing the surgical and medical experience acquired in the war—"Medical and Surgical War Manuals"); for hospitals; for hygiene and sanitation: for industrial medicine and surgery; for legislation; for medical advisory boards; for medical schools; for nursing; for research; for states activities; for surgery; for volunteer medical-service corps; for women physicians.

Some of the committees have associated with them various subcommittees, and here those attached to the committee on hygiene and sanitation are of a special interest. They are the subcommittees on alcohol and control of drug-addiction, on public health, nursing, statistics on tuberculosis and on venereal diseases.

Altogether, the work already accomplished, and to be undertaken by the General Medical Board, is immense in every way, and every physician, no matter where located, throughout the country should make it his privilege to offer his services freely and as fully as ever is possible to aid in this great service to the American people and to the world.

ARSENIC IN MALARIA

The success of the newer arsenic preparations in syphilis, trypanosomiasis, and other diseases induced by animal parasites naturally suggests the application of these remedies in malaria. And this is being done on an extensive scale in France, especially in combating the peculiarly obstinate Macedonian type of malaria. It seems that of these preparations neoarsenobenzol gives the best results when used either alone or in conjunction with quinine. However, while it seems not difficult to secure a clinical cure, by suppressing all manifestations of the disease, the examination of the blood tells a different story. In many cases, it has proved simply impossible to rid the patient completely of the parasite.

Arsenobenzol is used in full doses. It is, by no means, harmless, and quite a number of cases have been reported in which discomforting symptoms arose from its use. To guard against these, Milian advises the addition of adrenalin. Untoward symptoms are much more frequent in malarial subjects than in syphilitics. Jaundice seems to be common, but, not very severe. Otherwise the injections are well tolerated, as is shown by the fact of the patients' general willingness to have them repeated. The reason for this is, the extraordinary improvement in the general condition, the adynamia and anemia being quickly relieved. Carnot recommends administering, during one month, 6 injections of neoarsenobenzol containing from 0.30 to 0.45 gram each.

Judging from the study of the medical periodicals of today, malaria has ceased to figure as an important affection in America; however, if we should have an outbreak of it, it would be well to consider the methods most successfully employed in France.

THE NATIONAL SOCIETY OF KEEP-WELLS

Have you heard of the National Society of Keep-Wells? Sounds good, does it not? It evidently is in line with the prevailing trend toward preventive medicine.

It used to be said jokingly that the Chinese hire physicians to keep them well and that the emolument of these medicine-men ceased when and while their clients are ill. Whether this is true or not, the time will come when we shall recognize more generally than now that it is more economical to employ a physician to keep us well than to make us well after disease has declared itself.

The main object of the National Society of Keep-Wells, we are informed by a report of some remarks made by Mrs. Arthur MacDonald at a recent meeting in Washington, is, to interest and encourage the people of every community to organize and to invite their physicians to give practical talks on their specialties for the purpose of showing the people how to keep well rather than how to be treated after

they are sick. The attention of the moving spirits of the society seems primarily, to be directed to that fountain of innumerable ailments, the digestive apparatus. It is attempted to induce people not to chase fads and illusions in the way of food, but, to be contented with a well-balanced diet, the quality, variety, and quantity of which is regulated, not only by individual requirements, but, also by climatic and other conditions under which we live. Moderation in eating, as well as in everything else, is held out as a desideratum, and justly so.

All this is not proclaimed as anything new, but, it is brought to the attention of the people in a rather forceful manner and deserves to be taken up and taken to heart. As a class, physicians have been preaching moderation and correct eating and thinking as potent factors in the prevention of disease—until they became weary and discouraged because of the constant and continued infraction of the rules that have been designated as being calculated to maintain health. Yet, now, prevailing circumstances—political, social, economical—cooperate in causing people to stop and think. The increasingly great important function of the medical profession in these present times brings it about that more attention is paid to the advice of the physicians than was the case formerly, and it is well that we should fit ourselves to be guardians of the public health in every respect and in every way in which it is given to us to carry out our mission.

Every time you buy anything people work for you. Save labor and materials for the use of the Government.

THE HEALTH OF THE SOLDIER

One of the important factors requiring attention regarding the health of the soldier—not only when he is drafted into active service and while he serves in camp or in the trenches, but, also, after his return home and his reinstallation as a private citizen—is, tuberculosis. The tuberculosis-problem is one of the outstanding health-features of the day, owing to the strain and stress incidental to military service because of the deprivations and exposure to which soldiers are subjected; and it is feared that tuberculosis may increase among them. Furthermore, if we, as a people, should have to pay as high a price for whatever success may crown our efforts in the war, as our allies, if it should become increasingly difficult to secure sufficient food of suitable quality for the civilian population—especially in nourishing our young people and children adequately, the probability is that there will be more active tuberculosis among certain portions of the population. This is a possible danger that must be guarded against with great care, and, so, very naturally, the National Tuberculosis Association has undertaken measures tending to delimit and, if possible, to prevent a possible spread of this disease.

One of the best methods in this direction has been found to bring the matter insistently to popular attention, and, with this end in view, the National Tuberculosis Association has prepared an exhibit of fifteen posters on the "health of the soldier," which is available for general distribution at a price of $4.00 per set.

The exhibit is divided into three sections of five panels each. The first group of panels deals with contact-infection and shows how coughs, colds, measles, pneumonia, tuberculosis, and other diseases are spread by carelessness in spitting, coughing, and in contacts of various kind. The second section deals with the prevention of such diseases and shows how ordinary common sense and knowledge in covering the mouth in coughing, spitting or sneezing, combined with the use of individual utensils and periodic medical examinations, will safeguard against the spread of disease. The third section deals with fitness for fighting, shows in striking contrast that the best fighter is the fit fighter, and appeals to everyone to be fit as a patriotic duty.

These posters are printed in two colors on heavy lithographic paper, size 22 by 28 inches. The original drawings for the exhibit were made by James Daugherty, an artist of national reputation.

It goes without saying that home physicians are just as much interested in this problem as are medical officers in service. Indeed, if the present movement gains ground—and it is hoped that it will, namely, to secure a wider instruction of the people in health matters, through the agency of physicians—then the latter will truly become "doctors," that is to say, teachers, and will be in need of aids such as this selection of health-posters, by which they may demonstrate to their clients and to

those asking for instructions the points that they desire to bring out. Physicians, especially those in small towns and in country practice, would do well to secure these posters or to recommend their purchase by public libraries.

Hartley Withers, the editor of the Economist, of London, says: "Money spent in war time on things not needed is money given to the enemy."

TO THE DOCTORS' WIVES

Remember that the September number of CLINICAL MEDICINE will be a Woman's Number. It is devoted to you women, all the women of America, in appreciation of the splendid work you are doing at the present critical period of our national life. Most of the leading articles will be contributed by women—physicians, nurses, social workers, and others. In addition to this, however, we want miscellaneous articles, letters and other contributions, from the women at home, especially the wives of doctors in service. Tell us something about your home activities. We want to know how you are carrying on while the doctor is in the army; how you are doing your share in the war-work; and how you are keeping the home fires burning. Now, sit down and write us. Your letters should reach us not later than August 10.

GROUND GLASS IN FOOD

Every little while rumors are heard, charging the supporters of German propaganda and of German frightfulness with contaminating foodstuffs in various ways. Especially the charming pastime of mixing ground glass with food has been proclaimed to be a favorite means of rendering food intended for our and our Allies' armies injurious. The problem has been widely investigated by the division of laboratories and research of the New York State Department of Health. From *Health News* of May, we take the following:

Among the foods most frequently suspected, are spinach, tomatoes, and tomato sauce in tin cans, baker's bread, rolls, cooked meats, and flour.

Broken glass was not found in any canned vegetables. Sand was frequently present, indicating that care had not been taken to remove the soil from the material before placing it in the tin cans.

A number of samples of bread and rolls were sent to the laboratory, accompanied by pieces of glass said to have been found in the food. In a systematic attempt to introduce ground glass into baked foods, it would, undoubtedly, be distributed through the mass. However, in no case was any glass found when the outside of the loaf or roll was cut off and the main mass of material examined.

At present, the public is keenly alive to this question of ground glass in foods. The finding of a piece of glass in food would, ordinarily, be attributed to accident, now, however, it frequently creates unwarranted suspicion of malicious intent. Many people also forget that vegetables originally come from the soil, and very often retain some of it if not properly prepared.

The results of the laboratory examinations thus far indicate that caution should be tempered with common sense and that at the present time there seems to be no justification for serious alarm.

EDUCATION OF THE NEGRO

Two papers of unusual importance have come to our table, dealing with the education of the Negro and the Negro question in general. One of these is the paper by Doctor Wilson, delivered before the American Academy of Medicine. The other is a circular emanating from the Chamber of Commerce of the United States of America.

CLINICAL MEDICINE has strongly opposed in the past the tendency to ignore the differences between the Negro and the white man and to extend undue sympathy to the former, simply because he is a Negro. But, we can not help feeling that the author of the paper mentioned has gone to the other extreme. His criticism of the Negro is very largely based upon the fact that the Negro is not a white man. Hence, it is criticism rather than scientific discussion which he gives us. Throughout his paper, he fails to credit the black man with his most notable good qualities—and, he has plenty of them.

In his discussion of the question of education and its influence upon the criminality of the Negro, we find not one word of criticism of the methods of education in vogue; and, yet, it seems an obvious conclusion when education has failed to lessen the criminality and to improve the

health of the Negro, that his education has not been the one suited to his nature and conditions.

The first considerations should be: What kind of education does the black man need and what is the best method of securing it? The radical mistake has been in the attempt to base this education upon literary instead of industrial standards; but, an error quite as serious has been, a failure to realize that the Negro never will be suited to a life of isolation. He is essentially gregarious, and, while he needs the encouragement, advice and example of the white man he needs still more those things coming from the best developed members of his own race.

Then, again, take the expression of ours just used: "the example and advice of the white man." After generations of slavery, during which the Negro was taught to look up to the white man as a superior being, he was suddenly deprived of all support from this source, and without the slightest preparation compelled to assume the duties of citizenship. No greater crime has ever been perpetrated against the Negro—a far more serious one than that of taking him from his native home in Africa and transplanting him to this country. When we consider what has been the true nature of the "advice and example" given to the Negro by a large proportion of the white population, we ought to be glad to have the matter passed over in silence.

Labor and material are essential to victory; use both sparingly.

EGG-ALBUMIN AS A FOOD FOR THE SICK

For years, we have employed the raw white of egg as a diet in many cases of illness, especially in typhoid fever. Our reasons were two: first, the observations of Beaumont, which showed the quickest absorption of this out of all the foods he tested; secondly, the consideration that in the egg the albumin is absorbed into the tissues of the growing chick without having to pass through any digestive process. This latter fact especially commended itself to us because of the lacteal system being affected in typhoid fever.

Now, however, comes a French colleague, Doctor Linossier, who tells us (*Monde Méd.*, April) that we were mistaken; that, while raw egg-albumin quickly disappears from the stomach, it actually is not utilized as food. Even more, he asserts that it contains a toxic substance, probably a toxalbumin, and which is destroyed by the heat in cooking. Besides, he denies that cooked albumin is less easily digested than raw. Linossier pronounces eggs especially injurious in hepatic maladies, as well as in lithiasis. Unfortunately, there does not seem any way of deciding such a question excepting the very unsatisfactory and misleading one of clinical observation.

THE FRAMINGHAM COMMUNITY HEALTH DEMONSTRATION

The Framingham Community Health and Tuberculosis Demonstration, of which mention was made editorially in this journal (July, p. 492), recently published an account of a sickness census that was undertaken for several reasons; namely:

As a measure for obtaining a percentage figure for admitted illness, for possible comparison with other sickness surveys.

As an instrument for acquiring a more thorough general knowledge of the community selected for the demonstration.

As a basis for comparing sickness census with subsequent medical-examination findings.

As a necessary step, if sickness census figures, at the end of the demonstration, are to be compared with similar findings at the beginning.

As a measure of importance. in part at least, for the experiment with, and development of, machinery for the detection and control of disease, particularly tuberculosis.

This census, covering, as was originally planned, typical sections of the community and groups in the population, enumerated 6,582 people, a sufficient number to justify reasoning to the Framingham community at large regarding the probable prevalence of admitted illness. Among these people, 38 were recorded as being suspiciously or positively tuberculous.

The sickness rate for the entire group covered in the census was 407 cases, or approximately 6 percent, which is a higher rate than ever has been recorded elsewhere; indicating that a large amount of illness was recorded, particularly a higher percentage of minor conditions, as a result of more intensive publicity preceding

the census and the more liberal definition of sickness adopted for the study. Of the 407 sick people, a little over one half, or 220, were unable to work. 315 employed physicians, 9 were cared for in the hospital and 6 in the dispensary, so that 330, or 81 percent, of the total received medical attention.

These are only a few of the points brought out in this very interesting sickness census as they are published in the Framingham Monograph No. 2, lately issued.

George W. Wickersham, former Attorney General of the United States, says: "Business as usual means waste as usual."

SEAMEN'S INSURANCE

From a statement issued by the Bureau of Publicity, U. S. Treasury Department, we are informed that more than 69,000 masters, officers and seamen on American merchant vessels traversing the war zones have been insured by the United States Government. This insurance totals more than $115,000,000. Claims under the insurance are so far a little more than $180,000.

This insurance as to vessels traversing the war zone is compulsory, though it is not required that the insurance be taken through the Bureau of War-Risk Insurance. However, virtually the entire personnel of the merchant marine is insured by the bureau, the Government rate being only 25 cents for each $100 of insurance.

Since the American fleet has been patrolling the seas the rate has been reduced from 50 cents for each $100 of insurance.

If the owner of a vessel traversing the war zone fails to insure the masters, officers, and crew, the Secretary of the Treasury may take out insurance for them with the bureau and, further, fine the owner not more than $1,000.

The insurance affords protection for disability or death resulting from war perils and provides for compensation during detention following capture. One American captain's wife has been receiving a monthly check for $337.50 since her husband was captured by the Germans.

A man may now enlist in the merchant-marine service with full assurance that in case of death, disability, or detention in prison his dependents and loved ones will be provided for.

Similar plans of insurance are in operation for the soldiers and sailors in army and navy. If Uncle Sam calls upon his nephews to serve him, he, in return, protects them against loss to the fullest extent, irrespective of the fact that the country may justly expect the active support of all men and women, for its own protection and for that of the **world.**

THE HISTORY OF THE WAR

Enterprising publishers all over the country are announcing works, more or less pretentious, that have been published, are being published or are planned and purpose to relate the history of the world war.

The present writer always has been slightly skeptical concerning the possibility of such an undertaking at the present time, when history is in the making—and a more stirring, seething and painful history never was lived through; for, really, it is futile to try to depict the happenings with anything like the necessary degree of freedom from bias that is essential for a just delineation and correlation of facts.

For this reason, a recent communication by Doctor Roshem to *Paris Médical* of June 8 is of interest. This communication was inspired by a book entitled "False News of the Great War" and is of sufficient importance to be excerpted freely. Doctor Roshem says:

"While certain authors, even members of the French Academy, pretend, at the present time, to write histories of the war, it must be realized that such an undertaking is an impossibility. Complete documents are not available and, even if the author were acquainted with all the facts, one would have to be careful in disclosing them. We need not speak of the changes in the viewpoint that time will bring. The busy scribblers ignore that. Time, however, will not pardon them for this offense and their works will not live. Impartiality, without which it is not possible to be a good historian, is far from being a virtue during a war like the present one. In times of peace, of course, one may venture to voice disagreeable truths about one's own country, while in times of war this is dangerous and may be criminal."

"What has been called 'The Little History' can not escape the same strict uses. However, when I received the book of Dr. Lucien Graux, entitled "False News of the

Great War," I opened it with much curiosity as to how our colleague, who is a facile writer and versed in the composition of interesting books, had been able to avoid the rocks.

"As a matter of fact, his work is in the nature of a preface to an announced larger study, which it precedes. This first volume is composed of general considerations and psychological analyses that are penetrating and amusing, and written with a lively pen; also there are retrospective historical sketches upon the false news of the revolution, of the Empire, of the war of '70-71, and of the Commune.

It may be permitted to cite just one passage, which shows the spirit with which Lucien Graux has succeeded in picking out typical 'canards,' such as illustrate in a few lines the prevailing preoccupation of the moment. He says:

"In 1870, when Paris had been surrounded, and hunger began to gnaw at the vitals, the following appeared in a little publication by Villemessant, entitled 'Le Siège de Paris':

" 'One speaks of a convoy of fifteen hundred cattle. By a frequent ruse, these groups of cattle—which always have a boss-animal which they follow with a docility and confidence that might well be imitated by humans—have succeeded in entering through another gate than that leading to the encampments. The others have followed and the firing of the Prussian fore-posts, who saw themselves robbed of their prey, has only succeeded in accelerating the course of the deserters that have finally entered Paris, where their patriotism has guided them.' Doctor Graux continues:

"What was done to these patriotic cattle? I suppose they had the good taste to commit suicide by throwing themselves against some spit, and that the calves arrived with their noses already decorated with parsley freshly picked. The imagination of the news-gatherers has nothing to equal it, except for the naive attitude of their hearers."

This possibly is a rather forced example of "war news," yet, it is an example.

It is to be noted that those war stories and war books that have already been published, even those that lay claim to the ambitious name of war history, can not present anything but isolated occurrences. Were it possible to delineate the history in the making, let us say, of the war as it is conducted by the Allies, that still would, necessarily, be incomplete; and, above all, it would be dictated by the excitement of the moment and influenced by the anger and indignation at operations, raids, invasions, and atrocities of the enemy. Also, the author would be handicapped by the fear of the censor and by consideration of expediency. Much is now taboo that may be freely discussed in normal times.

Of course, in so far as the tactics of the central powers are in contravention of all recognized rules of "civilized" warfare (the irony of calling war civilized, at any time!), their procedures always must incite indignation and just wrath; yet, in time to come, the personal feeling will have yielded to a more dispassionate, matter-of-fact reasoning, and it will be possible to depict the happenings of the present time more correctly when one's blood no longer boils, when time shall have afforded solace for injuries suffered and for miseries witnessed.

One need not fear that, when that time of dispassionate, matter-of-fact historical recording has come, the methods of Germanic diplomacy and warfare will be dealt with too leniently. The central powers have forever placed themselves beyond the pale of decent governments and their people will require decades, if not centuries, of repentance, literally in sackcloth and ashes, before they can be received again in the community of civilized nations.

But, the point that we wish to make: War histories written at the present can be neither fair nor just, nor can they be true. They can be war histories, but, not war history.

STUDY OF THE CLASSICS PRELIMINARY TO THE MEDICAL COURSE

The subject of medical education is one that is ever present and concerning which only one thing is unanimous, this being that the best should be offered to medical students in order to make them into efficient medical practitioners. Just at present, we are concerned less with the medical curriculum itself as, rather, with the requirements upon which students are admitted to medical college. In recent years, all leading medical schools of the country demand

from the applicants for matriculation a Bachelor degree or evidence of not less than two years of college work. It has often been asserted that a college education is not necessary preparatory to the medical course and especially the necessity of a classical course has been denied and opposed sometimes almost vindictively as involving a needless waste of time. It is especially the study of the classics that has been deprecated many times, the demand being insistent for more "practical" preparation in young men and women for their medical studies.

It is, therefore, with particular interest that we have taken note of an address delivered by Prof. Lewellys F. Barker, of Johns Hopkins, at a conference on medical education at the eleventh annual meeting of the Southern Medical Association (*South. Med. Jour.*, May, 1918). Doctor Barker points out, what can not be disputed by anybody, that men and women contemplating the study of medicine should first receive a liberal education. To be able to understand, to convince and to persuade one's fellow man, as it is the function of physicians continuously to try to do, something more than endowment by nature is necessary: the intellect must be disciplined, the emotions must be schooled, the sympathies and imaginative powers must be developed, and what we mean by "will" must be educated.

While, then, there can be no difference of opinion concerning the necessity of a liberal education before entering upon the study of medicine, it is a question just what is meant by liberal education. In Doctor Barker's opinion, this involves, on the one hand, training in the physical sciences of physics, chemistry, and biology, as well as in mathematics, upon which the physical sciences are founded; then, on the other hand, a training in the humanities—history, languages, literature, and philosophy. The difficulty is only as to the amount of time and effort that should be devoted to the various departments of general knowledge that is to be attained in getting a liberal education. Especially the study of languages often is opposed as needless.

Doctor Barker, however, presents as a thesis, first, that students entering medicine should be liberally educated; second, that a liberal education includes an education in the physical sciences and in the humanities; and, third, that an education in the classics—the Latin and Greek languages and literatures—is an essential part of education in the humanities.

The last opinion expressed by Doctor Barker in his thesis is based upon his own experience through which he was obliged to acquire painfully the necessary knowledge of Latin and Greek which had been neglected in his earlier education; and, owing to this experience, he feels all the more keenly the great advantage that a thorough grounding in these two fundamental languages would have been to him in his later studies. For exact, concise, and logical expression, Latin stands supreme, while even a little knowledge of Latin and Greek is of the greatest help, not alone in understanding the terminology of sciences, but, also, in understanding the vocabulary of our ordinary life. Since language is necessary for thought as well as for communication of thought, studies that widen and deepen our knowledge of language are worthy of prosecution by the prospective medical student.

Dean Vaughan says, quite correctly, that the habit of class observation, of attention to detail, of looking for fine distinctions and shades of difference, and the alertness of mind awakened in an individual by these habits prove of inestimable service both in his experimental work in the laboratory and at the bedside of his patient when he becomes a scientific medical man. Carelessness and superficiality are incompatible with the thorough study of Latin and Greek.

It is not merely for its linguistic training that the study of Latin and Greek is advised, but, also, for the reason that it makes possible the study and the enjoyment of the classical writers. It is to Greece that we owe our principal literary forms, our fundamental ideas in science and in philosophy, and our standards for the recognition and enjoyment of beauty. To Rome, we are largely indebted for our courts of law, our system of government, our institutions, our ideals of the family and the national life. The intellect of the Greeks and the character of the Romans are a priceless heritage. While the literary inheritance that has come down to us from both is accessible in translation, this never can, as Doctor Barker points out,

adequately reproduce the spirit and essence of the originals. For one fully to enjoy an ancient author, he must read, not in English equivalents, but, in the author's own words.

Doctor Barker summarizes his remarks by saying that the mental training that the study of the classics offers, the cultural value of the great literatures of Greece and Rome, and the pleasure derivable from the reading of the ancient authors, especially the poets, in the original, make the inclusion of Latin and Greek in any plan of education that may be called truly liberal inevitable. The classical authors still possess their potency.

In the discussion of this interesting communication, an observation was brought out that has been made by many teachers, namely, that the student who has had a classical training is more teachable than the student who has not had it. In the study of the classics, more mental exertion is required than in that of the modern writers; and what we require in education is mental discipline, the best studies being those that will give the maximum of disciplinary training. It was also fittingly shown that, for the study of medicine, the better the training and the larger the experience, the better was the teacher, other things being equal. The more the previous educational training, even to the A. B. degree, the better the student will be and the more he will get out of his medical education, and the better physician he will be as a result.

It undoubtedly is true that those students—and others, for that matter—who have not had the advantage of severe classical training, including the study of Latin, at least, are at a disadvantage as compared with their peers who have enjoyed that privilege. In his teaching experience in modern languages, the present writer always found it far more difficult to teach those young people who were without any knowledge of Latin, while those who had studied this language could readily and without difficulty be made to see the intricacies and necessary rules in grammar. Indeed, he is inclined to assert that it virtually is impossible for most English-speaking persons to acquire a grammatical conscience, to feel and understand finer grammatical distinctions unless there is a basic knowledge of Latin upon which the grammatical sense can be developed.

Surely, it may be expected of physicians, as members of an academical profession, that they at least should speak and write English correctly. Yet, it is notorious that medical English bristles with grammatical and syntactical atrocities that would shame a school-boy in his first year of Latin in any of the European schools. A man may be a man for all that, yet, the container always should be worthy of the contents, and an address or an article or a book should, it may be demanded with justice, be clothed in correct, well-chosen, and concise language. It is for this reason that we are convinced that medical students should have the ability, or should be made to acquire it, of correct expression of thought.

A man might as well talk of going on his honeymoon alone as hope to accomplish any good by worrying.

INCREASE IN INDUSTRIAL ACCIDENT MORTALITY

The attention paid for a number of years to the safety and welfare of industrial workers generally has resulted in a lower accident rate than has formerly prevailed, thanks, particularly, to many ingenious contrivances invented and utilized for the purpose of diminishing the possibility of harm to the workers in hazardous occupations.

It is not without a degree of apprehension that we note, from the result of mortality statistics covering the experience, during the year 1916, of the Metropolitan Life Insurance Company, concerning 9 million white lives insured in its industrial department, that the accident rate for the working classes of the United States increased 5 points per 100,000 men living, over the mortality for 1915 (*Monthly Bulletin* of the Department of Public Health and Charities of the City of Philadelphia for September, 1917).

This condition may be the result of the increased activity in industry and to the speed-up processes incident to war conditions. However, mortality from automobile accidents and injuries showed by far the largest increase in the rate for any of the specified causes of accidental mortality. This must be attributed in part to the speed-mania, characteristic of Americans as a nation, and also to recklessness.

Leading Artieles

Dermatological Notes—II.

Etiology of Eczema

By A. V. RAVOGLI, M. D., Cincinnati, Ohio

THE causes of eczema must be found in a local irritation of the skin and in a peculiar liability of the general system. The local causes which act as irritants on the skin are perceptible and usually known, while the internal causes ascribed are, in general, theoretical and more suspected than actually known. External causes are, mostly, all irritant substances capable of producing dermatitis, such as mercurials, formaldehyde and cement. The views of Hebra always were in favor of external irritation as a factor in eczema, he refusing entirely the theory of arthritism of Bazin, that of herpetism of Hardy and that of the eczematous dispositions of Devergie.

However, Hebra never has denied the influence of the state of the general system on the reactivity of the skin to the injurious action of the external irritants. He laid a great deal of stress on the condition of the blood, when he explained the production of eczema from irritating causes which for many years had never produced any trouble on the skin. Thus, a washerwoman for twenty years has used soap and lye, without the skin being affected in any way, when all at once she gets eczema of the fingers, of the hands, of the arms from the same soap and from the lye. He said: "Now let us investigate the general condition of that woman. She has lost weight, she is pale, she no longer has regular menstruation, her appetite no longer is what it was; in one word, her system is run down, her skin is not nourished as it was, and more, the same soap and the same lye, innocuous for so many years, have become irritant and a cause of the eczema."

We must not forget that, when finding difficulty in explaining the recurrence of eczema, either from the external irritants or from the internal humoral crasis, authors have turned their attention to the nervous system, and Bulkley has been one of the greatest supporters of the theory of nervous eczema. Broca admitted also, for certain kinds of eczema, the influence of a shock or of moral troubles as causative of the eruption. This was, after a while, accepted by Kaposi as reflex eczema. We know that angioneurotic conditions are the direct cause of urticaria, of erythema, of some kinds of edema, which may prepare the skin for the eczema. Either with or without this preparation of the skin, an acute eczema often makes its appearance in a short time after a nervous shock, after a fit of rage or bad news, and an inflammatory condition of the skin. We would question, however, that the nervous system has a direct influence on the skin, rather than a disturbance of the digestion often causing fermentative toxic elements which, absorbed and carried into the circulation, affect the vasomotor center. The vasomotor instability would be a cause in preparing the skin for the onset of eczema. It causes an itching sensation, which impels the patient to rub, to scratch, thus making the skin vulnerable and easily accessible to the action of the pus-germs. On several occasions we have called attention to vesicular eruptions, symmetrical of the palms, of the soles, which are going under the name of

eczema, and which really are the result of peripheral neuritis. Herpes labialis, as also herpes progenitalis suddenly arises from an inflammatory condition of the nervous ramifications and this, by accidental pyogenic infection, may become the focus of a stubborn eczema.

Eczema Often a Secondary Effect

Eczema, in many instances, is only a secondary affection, it being found to accompany some cases of psoriasis, prurigo, scabies and trichophyties. It seems that in all pruriginous affections eczema is produced by the scratching with the finger nails. The idea of comparing eczema with the exanthematous eruptions is not tenable, when we consider the onset of the exanthema as affecting simultaneously the whole body, while eczema spreads gradually from one region to another, so to say, by continuity or by contiguity.

Dietetic errors often are credited with the production of eczema. In fact, we find many physicians who give to patients suffering from eczema a printed list of what they may eat and what they must avoid. In some cases, we have found that almost everything was to be avoided, so that very little remained to be chosen by the patient for his nourishment. We never shall forget one patient who, when he asked for the diet-list, was told to eat good substantial food and not to bother himself about so much selection in the different articles Learning this, he rejoiced and thanked God for this good news. The selection of his foods in hotels was a great trouble and such patients disliked to sit at the dinner-table, on account of so many restrictions.

The influence of the food in the production of eczema rests either upon the quantity and quality of the material or upon a bad digestion, thus causing fermentation, from faulty assimilation, or upon lack of excretion of the residuals of the digestion. From this viewpoint, it is clear that we may have eczema from alimentary elements as well as from autotoxic substances arising from a faulty digestion. The abuse of alcoholics must be taken into consideration, especially as eczema of the legs and feet in old alcoholics has some connection with the abuse of liquors. Gastrointestinal catarrh, dyspepsia, a too rich or a too poor diet often is found to be a cause of eczema, especially in children. To diet has been attributed great importance in the secondary elements resulting from a lack of assimilation, such as uric acid, xanthin, kreatin, tyrosin, and so forth. The presence of these noxious substances in the blood, because not entirely burned, and brought to the skin, would irritate and act as causative of eczema. This irritative action, however, is more a speculative one, because thus far it has not been directly proved, and it seems that it is more likely to produce erythema, urticaria, and probably eczema as a result of the other affections.

Effect of Treatment

It must be pointed out that eczema, when produced by these internal conditions, is not cured by remedies directed against arthritis, but must be treated with external applications. The remedies for the internal ailments would be ordered only for relieving the condition of internal disturbance; but, the skin should be helped locally.

Nobody can deny that the regulation of the diet, the removing of alcoholic beverages, the regulation of the functions of the bowels, massage, fresh air, exercise and changing the method of living of the patient have a great influence upon the health and, no doubt, will help to obtain recovery from the eczema. Some change in living, however, will also help in the treatment of acne, chronic urticaria; for, very likely the irregularity of diet, if it was not the direct cause of eczema, was at least a drawback in the cure.

Alimentary substances can not be considered as a direct cause in the production of eczema, but, only as an indirect cause, in diminishing the resistance of the organism to the pathogenic action of the microorganisms. Indeed, as Unna remarked, by the regulation of diet, eczema is improved in the same way as urticaria and acne also are somewhat improved. After eating indigestible or questionable food, through the reflex nerves of the digestive apparatus, the itching sensation must increase. Moreover, the toxic elements produced by a faulty digestion and carried to the skin will, certainly, aggravate the inflammatory process, increase its severity, and start another relapse. A direct irritation on the skin is the principal cause of the eczema, as we see in those handling cement, lye, some photo-

graphic developers (e. g. mitol), but, the resulting affection of the skin in this instance is a dermatitis, and not an eczema. However, the dermatitis soon will be changed into eczema, when the pus-cocci invade the irritated, macerated, and abraded epidermis. In our experience, we have seen quite often eczema developed around pus-foci, and in the same eczematous patches develop pustules and furuncles, resulting from the same microorganisms. That in eczema there exists some slight contagiosity can not be denied, and we have seen eczema occur on the breast of the mother when the nursing infant had eczema of the face or of the scalp.

It is necessary to mention that often eczema starts with herpes tonsurans, or trichophyton tonsurans is at the bottom, and the so often mentioned symmetrical lesion is nothing else than the infection by contact from one region to another. In cases of the old eczema marginatum of the fossa crurogenitalis and the internal surface of the thighs, it occurs on both sides, because both sides are in close contact. In the palms and in the fingers, eczema often is the result of trichophytic infection, which is so easily transmitted by towels, straps, et cetera. Ormsby already had occasion to call the attention of dermatologists to the presence of the trichophyton in those stubborn cases usually treated as squamous eczema.

That the finger-nails, by scratching, are transferring microorganisms from infected parts of the skin to other parts, is known to the patients themselves. They know that if they can abstain from scratching, they are better off, and the eczema remains limited. Every dermatologist has made his own observations in the reacutization or in the relapses of eczema, which starts usually around a rhagades or a fold of the skin, where some pus or some secretion could remain undisturbed and afford a chance to the staphylococci to develop and prepare another relapse.

Eczema often is an occupational disease. We already have mentioned that those working with hands in cement often are affected with eczema, which is of the relapsing type. Cooks and laundresses often are troubled by eczema from the steam arising while at work. Barkeepers and dishwashers, who have their hands in water most of the time, are liable to be affected with eczema. Undertakers, embalmers and medical students handling corpses kept in formaldehyde are subject to dermatitides, which are soon changed into eczema. Dentists handling metallic mercury in making amalgams have often come under our care for stubborn eczema of the palms and of the tips of the fingers. Eczema of the plantar surface of the metatarsophalangeal region and of the interdigital spaces is often the result of excessive walking, especially in those afflicted with hyperidrosis. The epidermis, macerated by the perspiration, gets hard and inelastic, easily cracks, and these cracks constitute nests for the staphylococci that produce eczema.

Contagiousness and Predisposing Causes

In our view with regard to the course of eczema, its suspected hereditary transmission, and the relapses, nothing stands against the conception of the cause of eczema as a local staphylococcus infection. The dietetic errors, the vasomotor disturbances, the rundown condition of the patient are of great importance in the reproduction of eczema only as occasional causes favoring the reproduction and the virulence of the microorganisms. Unna described three different forms of cocci which he found in the epidermis in the scales, and in the crusts of eczematous patches, to which he would attribute the production of parakeratosis, spongiosity, and akanthosis. In short, the eczematous surface has been found abundantly covered with cocci, and the cocci, scraped from the eczema and inoculated in animals, have produced vesicular eruptions of an eczematous nature. This explains the slight contagiosity, which has been observed in some cases of eczema; these cocci, when placed on another skin in favorable circumstances, may reproduce the disease.

The quick and rapid spread of eczema has been somewhat against the microbial theory, and many have, rather, upheld the opinion of its being a vasomotor disturbance. We see dermatitides that in a short time are changed into eczema. Often the physician is the cause of the eczema, more often the patient himself, by applying on the inflamed skin greasy remedies, which cause irritation and the spreading of the eczema. In many cases, the stubbornness of the eczema can be attri-

buted to the poor attention to the treatment given by the patient, to some inopportune applications, and to inexpedient advice given the patient.

The maceration of the epidermic by keeping the skin in water or in chemicals or in irritating substances is an important cause in the production of eczema. The same can be said with reference to secretions, normal or abnormal, remaining on the skin, as, for instance, urine, vaginal secretion, diarrhea, perspiration, intertrigo, et cetera. When the epidermis is macerated, it offers the best culture-medium for parasites. Rhagades resulting from the maceration of the epidermis are the cause of the chronicity and of the relapses of eczema. As long as the rhagades have not healed up, eczema will recur, as the rhagades are nests of microorganisms from whence they start reproducing the eczema.

In many cases, eczema is produced from scratching, by inoculating the pus-germs in cases of other affections. Eczema often accompanies scabies, senile pruritus, and lichen planus. Eczema of the lower extremities often is found together with varicosities and varicose ulcers of the legs.

In children, we must admit a certain disposition to eczema, from their skin disposed to seborrhea. Under the seborrheic masses on the scalp and also of the face, the pus-germs find a well-prepared culture-medium, and those children are subject to infantile eczema. It may be that in their constitution there exists some tendency to the development of eczema in consequence of a tenderness of the skin and of a poor general nutrition. Dentition has often been considered a cause of recurrent infantile eczema. It may be that, from an angioneurotic condition, the skin of those children is prone to be affected by eczema. In adults, eczema may develop as a consequence of acne rosacea, which we often see as the result of catarrh of the stomach. Eczema may follow the application of salves, of irritant chemicals, of exposure to the x-ray. In consequence of pediculi capitis, an eczema of the impetiginous type develops on the scalp. For this reason, pillow-cases, towels and napkins must be watched and not allowed in a family to be used promiscuously when there is a case of eczema. Flannel garments are greatly objectionable, since they cause itching, irritation, and not infrequently eczema. Seborrheic eczema of Unna often is found in those wearing flannel garments, and the flannel eczema, or flannel rash, is known to everybody as the result of those garments. Indeed, in the flannel, there is the irritation of the skin caused by its roughness, the warmth, the perspiration, the maceration of the epidermis, the scratching, the inoculation of the pus-germs, and the eczema. We must point out that, when someone has suffered from eczema, the skin remains so liable that any slight irritation is capable of bringing back the trouble.

Summary of Causes

Summarizing, we see, then, that eczema is the result of pus-germs affecting the skin and causing that peculiar weeping eruption. The causes, however, are those producing irritation in the skin, of mechanical, chemical, thermic, physiochemical, or of electrical nature. All those external causes produce dermatitis which affect the epidermis and prepare it for the attack of the pus-germs. Internal causes are all those which produce hyperemia, congestion of the skin, and vasomotor disturbances. Moreover, all those conditions of the organism which render the blood below the standard diminish the nutrition of the skin and, consequently, its resistance, and render it an easy prey to parasitary germs. Parasites, especially the different varieties of trichophyton, often are at the basis of the relapses and of the stubbornness of eczema, which never will heal until the trichophyton is entirely eradicated.

The Anatomy and Physiology of the Stomach

By A. L. BENEDICT, A. M., M. D.
Editor *The Buffalo Medical Journal*, Captain, M. R. C.

(Continued from July issue, page 497)

Gastric Muscle

NEARLY, if not quite, all tubes of the body, of every kind and size, that have muscular walls at all, anticipate the usual construction of such artificial tubes as garden-hose and gas-tubes, by having an internal muscular coat arranged in rings and an external muscular coat the fibers of which are longitudinal. In the case of the stomach, the external, longitudinal muscle-fibers of the esophagus are continued also over the proper longitudinal coat of the latter and, as the two organs join at an angle, the esophageal fibers continued over the stomach have a somewhat irregularly oblique direction.

It has long been taught that the proper circular and longitudinal coats of the stomach act to produce a peristaltic wave, while the oblique coat adds an irregular churning action. But, neither observation of the exposed stomach of animals at vivisections nor of human beings at operations, nor observation with the fluoroscope confirms this sharp distinction between peristalsis and churning.

So thoroughly imbued have we been with the theoretic description, however, that sufficient attention has not been called to this point. The peristaltic waves of the stomach do not, it is true, proceed with quite the same regularity as in the tubular esophagus and intestine, but, no distinction of two kinds of movement can be made out by an unprejudiced eye.

External Coats of Stomach

Outside of the muscular coats of the stomach, is a rather dense, supporting fibrous coat, connected by delicate connective tissue to the visceral layer of the peritoneum, which covers practically the entire stomach except at its attachments, and which, strictly speaking, is not a layer of the stomach itself.

Without entering into the anatomic details of the blood-vascular, lymphatic, and nerve supply, it is of practical importance to remember that all the larger trunks enter or leave in the folds of peritoneum along the greater (inferior and left) curvature and the lesser (superior and right) curvature—using these locational terms as if the organ were flattened out anterio-posteriorly. While the blood enters the stomach from the main arterial supply, as it would any other organ, the venous blood, with some minor exceptions, goes into the portal vein and thence through the liver, so that any obstruction on the portal trunk or because of lesions of the liver itself tends to produce a congestion of the stomach, sometimes so great that hemorrhoidal dilatations are formed. When, as may happen, these latter rupture and produce massive hemorrhage, this is very apt to be confused with that due to peptic ulcer or cancer. More often, a chronic congestion and catarrh is produced, chiefly from the lesions of hepatic sclerosis, in this climate, and minute ulcers or bleeding points are very prone to develop, these still more closely simulating the ordinary small hemorrhages of gastric cancer; the picture being still further confused by the fact that both lesions occur most frequently in rather advanced life and otherwise resemble each other closely until cancer gives rise to unmistakable diagnostic appearances that render the diagnosis of little practical value.

I may cite a case which illustrates, not only the practical difficulties of formulating a diagnosis, but, the difficulties even in an academic sense.

An elderly man had a sudden, quite massive venous hemorrhage from the stomach. His liver was contracted and there were the venous twigs following the diaphragm which many years ago I described as diagnostic of hepatic sclerosis. With considerable hesitation, the diagnosis of back-pressure hemorrhage, due to the bursting of veins dilated from the effects of hepatic sclerosis on the portal current, was made. I have, in other cases, made this differential diagnosis against cancer, or, let us rather say, "guessed" right, and had the matter corroborated by necropsy in

fatal hemorrhages and by long persistence of life and general health (in one instance, for ten years, with death, finally, from cerebral hemorrhage).

In this case, the diagnosis was, apparently, corroborated by the cessation of symptoms and the absence of indications of cancer. By a curious succession of serious conditions, the patient nearly choked to death from swallowing an oyster-shell a year or so later; then, after another interval of good health, there developed laryngeal tuberculosis, from which he died. At necropsy, the hepatic sclerosis and venous congestion and dilatation of gastric veins was corroborated, but, there also was revealed a small nonulcerating scirrhous cancer of the stomach. The question naturally arose (and, so far as I can see, it is quite unanswerable) as to how long had the cancer existed? For that matter, how long has any cancer existed, either in the sense of raising the question whether all cancers develop from "rests," or, in the more practical sense, how long they have existed in appreciable extent, if exposed to view, up to the time of yielding appreciable symptoms which gradually increase till they enable us to make the proper diagnosis or, more fortunately, still, that enable us to drive the patient to a successful operation in advance of a positive diagnosis?

In the case in question, while the general condition of the stomach and especially of its venous blood supply might be construed as confirming the original diagnosis of back-pressure hemorrhage, the question as to duration of cancer took this special form: Could a limited cancerous area produce a massive hemorrhage, remain quiescent for a period of about three years after the hemorrhage, and heal over to such an extent that no sign of ulceration is present at necropsy?

The anatomy of the gastric lymphatic trunks is important from the standpoint of cancer. They extend the whole length of the lesser curvature, to the cardia, but, only about half of the distance along the greater curvature where there is said to be a lymph-node palpable in gastric cancer. I confess to the same failure to palpate this lymph-node as in the case of the supracondylar node said to be always present in syphilis.

The lesson as to the amount of gastric tissue to be removed in radical operation for cancer is a very practical one—or at least would be if it were easier in practice to find surgeons who are willing to undertake a radical operation and not hypnotize the attendant and the patient into a gastroenterostomy.

Perhaps because of the stiffening of the stomach, due to the vascular, including lymphatic trunks, up to the point mentioned on the greater curvature, it is here where the peristaltic wave is deepest and an indentation can even be made out occasionally by such purely external methods as auscultatory percussion. The nutritional and innervational factors depending upon the limits of trunk vessels and nerves also determine this point as the site of election of certain ulcers and cancers and of hourglass contractions.

A caution as to x-ray findings may best be enforced by citing a case in which the diagnosis of hyperchlorhydria was made, the area being normal on auscultatory percussion. While there seemed to be no necessity of an x-ray examination, the patient insisted upon it, and, as a result, the radiographer reported the presence of an hourglass stomach—to my deep chagrin. I went over to the laboratory to inspect the plates and was, at first view, convinced that I had failed to diagnose a clearcut case. Possibly with the idea of rubbing it in, the radiographer showed me more plates, all beautifully typic of hourglass contraction; however, the line of stricture was at different places in the different plates. Beyond a certain point, evidence becomes too convincing to be true. Then it was that the fluoroscope revealed the real condition. We had to do, not with an hourglass stomach, but, with a very marked peristaltic wave.

It should be remembered that the bismuth does not follow the external outline of the stomach, but, rides on the internal glandular membrane, which is liable to be thrown inward by an elevation of rugæ as the wave passes, if, indeed, the mucus, food remnants, and excipient of the bismuth do not allow it actually to be bounded off from the internal surface of the stomach. Thus the peristaltic-wave picture is exaggerated by the x-ray and the bismuth always indicates the extreme inward projection of the stomach at any given point.

Regional Anatomy

Anatomical charts depict the stomach as fully distended, to a capacity of about

2500 mils, with a peculiar curve usually described as gourd-shaped (although only a few gourds attain this particular shape), lying in the epigastric and left hypochondriac regions, with the pyloric portion passing the median line well to the right. Such a stomach, while potentially correct in outline and size, is never encountered, normally, but, would call for immediate evacuation, in order to relieve the distention, if, indeed, it did not kill by pressure upon the heart before relief could be afforded. But, even if the latter accident did not occur, any such degree of distention and weight would result in gastric dilatation or ptosis, or both, if it were long continued or repeated. Full nutrition with foods of average bulk, requires, at most, a distention to about 1500 mils' capacity, for short periods.

The continuous free escape, even of considerable quantities of liquid and semi-liquid contents, occurring rhythmically almost immediately after ingestion is begun, reduces a light test meal, from a bulk of 250 mils, to 100 mils within an hour, and the stomach, even during and after a fairly hearty meal, including several glassfuls of liquid (approximately 200 mils each), does not often hold more than 1000 mils at any given moment or retain more than 500 mils for more than an hour. After one hour after a very light test meal up to five hours after quite an elaborate dinner, until the next meal, the stomach is nearly empty. The "acute gastric dilatation" of surgeons is, probably, rather a condition of distention with liquids and gas or air, approaching the anatomic picture of the supposedly normal stomach, than a true dilatation; although the latter may, of course, develop or may have existed before operation.

The anatomic picture of the stomach rises to the fifth left rib, the ordinarily full stomach to only about the seventh. The greater curvature reaches its lowest point 1 to 2 inches above an equator drawn through the umbilicus, and the same distance to the left of the median line. The pylorus is freely movable, usually palpable with difficulty or not at all, unless it is pathologically hardened in some way, including that by muscular contraction. It is located at about the level of the tip of the ensiform cartilage and a little to the right of the prolongation of the right margin of the gladiolus.

Instrumentally considered, the cardia is 40 cm. from the incisors; the bottom (not the fundus) of the stomach is almost exactly 55 cm. (with a slight difference according to stature); while the pylorus, following the natural curves, is 60 to 65 cm.

Moderately distended, the projection of the stomach on the anterior abdominal wall, disregarding the pyloric extention, is an ellipse, with its major axis at an angle of 45 degrees. The more slender and long-bodied the individual, the nearer does the axis approach to an angle of 60 degrees, while in flabby, large-waisted and short-bodied individuals it lies at an angle of about 30 degrees from the horizontal. Exceeding these limits, the stomach may be considered abnormal, even if the direction of the axis is habitual and, in the first type, inevitable, because of the small waist-room available after allowing for the vertebral column, great vessels, and the necessary presence of portions of other organs. Reference is made, under present fashions, not to tight lacing, but, to congenitally small-waisted persons, mainly women. Tight lacing is practically a dead issue, along with the constricting garter. A stomach that is too nearly upright or too nearly horizontal has up-hill work, in the literal sense, to extrude its contents through the pylorus and almost inevitably tends to become dilated or ptotic.

A great many writers confuse the two conditions, dilatation and ptosis, and it must be admitted that they have much in common in etiology and tend to be associated; however, the distinction should be made, according as the upper part of the stomach does or does not maintain its normal level, as defined, without regarding merely the level of the greater curvature.

These data can be most easily obtained by recourse to x-rays, with due allowance for the fact that an instantaneous radiogram is misleading, even if strictly correct, in the same way as an instantaneous photograph, the fluoroscope permitting of a fairer conception of size and location. Transillumination does not necessarily show a luminous area corresponding exactly to the stomach, and is misleading. Auscultatory percussion or its modifications may be employed with confidence by those who are expert, but, it takes time to acquire the art—a point which many men of good reputations do not appreciate, hence, denouncing the method simply because they imagine that their general reputation and standing should enable

them to pass judgment almost at the first trial.

The lower border can be determined pretty accurately by the thermic sense, after the patient has taken a glassful of ice-water. Mark I. Knapp's claim, that the areas of the stomach and various other organs can be determined by inspection, at first thought seems incredible, but, the interruption of the respiratory wave, by the rebound of the body-wall from a subjacent organ, really is visible in a great many instances. It is necessary to sight obliquely and to observe the respiratory wave closely for a few minutes.

[*To be continued.*]

After Thirty Years—V

Notes and Reflections on Life and Work

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

Vacations

IT is pretty generally recognized that the doctor, like everybody else, needs a vacation occasionally. The closeness with which he is bound to his work practically puts him on duty twenty-four hours in the day. He may have on hand a good deal of idle time, yet, there never is an hour that he can be sure of calling his own. He may have bought theater-tickets or planned an outing with his friends or have invited guests to dinner and, yet, at the last moment, he may be called away to some patient that can not be refused. When he goes out of town, his business stops entirely. The merchant's business will go on when he himself goes on a journey; the farmer's crops go on growing when he leaves home; but, the doctor's business comes to a standstill the moment he is out of reach of the telephone. Even the mere absence of a half-day may cost him heavily. For example, take this occurrence:

During the World's Fair, one day, I had planned to spend the afternoon at the Exposition, but, a patient came to the house and delayed me so much that I missed my train, greatly to my disgust. During that afternoon, I was called to an accident-case that netted me over 200 dollars during the next month. Had I gone to the fair that afternoon, I probably never should have known how costly a holiday I had spent. The patient who delayed me was humbly apologized to—in my own thoughts, that is—for the hard things I had said of him (also in my own thoughts) when I found I had missed that train.

For such reasons as these, doctors, as a rule, stick pretty closely to business, so that, in consequence, a yearly vacation, really becomes a necessity. Some years ago, I sometimes would pass three years, once even five years, without taking a vacation; however, each time a partial breakdown in health convinced me that, instead of "not being able" to afford a vacation, I actually could not afford to do without this relief. In passing, I might remark that, when on a vacation trip, I often made acquaintances who afterward became patients, so that the time is not entirely lost from the business-point of view. Some of my best patients were acquired in this way.

When the doctor decides upon a vacation, the first thing to do is, to decide where he wants to go and what he will do. Here, personal tastes and the size of the bank-account ordinarily are the deciding factors.

One man enjoys getting into the country and loafing away his time in a hammock, novel in hand. Another is perfectly happy a-fishing or a-hunting. One prefers to go to a resort where he can find plenty of society, another wants to be alone in the woods or mountains or maybe camping with a congenial friend. The man with scientific tastes may prefer to botanize, geologize or chase butterflies and bugs. To some, a lake or ocean voyage gives the height of enjoyment; others prefer a walking tour or a cross-country trip with a bicycle or automobile. War-saving, just now, may lead some even to take their outing by working on a farm.

Essentials of a Vacation

Perhaps the most important feature of a vacation is, to get a change—a change as

different as possible from our daily routine; even work is a rest if it be different from our ordinary work. But the vacation should always be spent in the open.

Also, attitude is very important. What philosopher was it who said, "Boston is a state of mind"? You can make your vacation either a failure or a success, according to the mental attitude that you carry into it. It is desirable to dismiss all thoughts of business and for the time being to make a business of having a good time. There may be things at home that have a tendency to worry you. That last fracture-case, perhaps, did not turn out quite right or a patient may have taken French leave, owing you a large bill. Forget it! Time enough to worry when you get back. If you go resolved to have a good time and to help others have a good time, if you are determined not to pay any attention to the little annoyances and inconveniences that are inevitable in every outing, you have laid the foundation for a vacation that will bring you back full of energy and health for another year's work.

So far as possible, every vacation ought to be a return to the simple life—outdoor life, with simple food and unlimited fresh air. There is in most of us an instinct that makes us long at times for the life of primitive man. In boyhood, it crops out in the desire to live in caves, to construct dugouts and playhouses. How vividly I remember the keen enjoyment we got out of such shelters! I could point out today the site of a famous bark wigwam on a forest hillside of long ago, where a few of us enacted the lives and adventures of Fennimore Cooper's Indians and hunters. And when later we were lucky enough to find a piece of an old sail large enough to make a tent, what a sensation! No rookie in our cantonments today is prouder and more conscious of his importance on his first guard duty, than I was during my first "sentry-go" before that tent. Any fellow who came along without the password was marched straight to the guardhouse (an old hollow stump). Some of those passwords were wonderful constructions. It was shortly after the Crimean war, and that helped some. I remember how one day we had a dispute in selecting the password for the day; I was strong for "Sebastapol", while a chum insisted that "Inkerman" sounded more solemn, while another stood firm for "Balaklava", claiming that it sounded more reckless.

Similar was the joy I used to feel in the gray dawn of frosty mornings on the farm, when, a barefoot lad, I went to the pasture lot to bring home the cows for the morning milking. As I started up each cow, the earth would be warm on the spot where she had lain; and what a delicious sensation it was to huddle down for a minute or two and warm my bare feet and legs on the warm earth. It was getting close to nature.

Men are but boys of larger growth and most of them feel at times the instinct to return to the primitive life. It is what Kipling calls "The Call of the Red Gods." I have only to read his poem, "The Feet of the Young Men," to feel the old stirring of the spirit and longing for the wild, "for, the Red Gods call me out and I must go".

It makes the blood flow a little faster in the veins to read :

Who hath seen the beaver busied?
Who hath watched the blacktail mating?
Who hath lain alone to hear the wild goose cry?
Who hath worked the chosen water where the ouananiche is waiting?
Or the sea-trout's jumping-crazy for the fly?

Or this:

Who hath smelt wood-smoke at twilight?
Who hath heard the birch log burning?
Who is quick to read the noises of the night?
While resting
On a couch of new-pulled hemlock,
With the star-light on our faces,
In the camp of proved desire and known delight.

And the eating! What zest the wild life gives to the appetite! The simplest fare becomes the ambrosia of the gods. To sleep late in the morning when it is our companion's turn to act as cook; to wake up with the odor of frying bacon in our nostrils! Is there any fragrance in the world like it to a hungry man, or any music like that sound which Harry Lauder speaks of as "hearin' the ham and eggs skirlin' in the pan"?

Every vacation should provide for three very important needs, namely: plenty of fresh air, by outdoor life day and night; simple but nourishing food; and safe drinking water. On farms and at some resorts, the supply is from wells, and these are not

always protected from contamination as they should be. Too often the city dweller brings back in his system the germs of typhoid fever when returning from his summer outing.

Systematic physical exercise during a vacation is a decidedly beneficial feature for persons whose habits at home are sedentary. While a doctor's occupation hardly can be classed as sedentary, yet, there are many in the profession who get no more active exercise than the operating of an auto or running for a street-car. A walking-trip may be made very enjoyable with a good companion. Of course, one must begin moderately, getting the muscles hardened gradually. This affords, possibly, the best way of seeing a country, as a pedestrian is not limited to the roads. For scientific study, it is the ideal way.

Fifteen or twenty years ago, a bicycle-trip was a delightful way of spending a vacation, and it is a great pity that so fine a sport should have been allowed to die out. There are two reasons for this. With the majority of people, it was simply a fad, so, when the novelty wore off, the fad was discarded. Then, of late years, the automobile has made the bicycle rather unsafe. To ride a wheel today among the swarms of those fleet cars that fill the roads, is, to take one's life in one's hands. I was so averse to giving up such a fine exercise that, in spite of its having become unfashionable, I continued to ride my wheel up to five years ago. After several narrow escapes and after a friend who had kept up his riding had been run down by an automobile and had spent several months in the hospital, I concluded that discretion was the better part of valor and sadly consigned my steel steed to the junk pile.

An auto-trip is a fine way of spending a vacation, provided that good judgment be used. The temptation is, to travel too fast and too far in a day. The passenger becomes so wearied and exhausted that he loses his zest for seeing the country, while the man at the wheel is under such a nerve-strain that it is a joke to call it a rest. Besides, the driver has to keep his attention so closely on his road that he has little chance to enjoy the landscape. Still, an auto-trip can be made most enjoyable if it be taken leisurely, with frequent stops when there is anything worth seeing.

A lake- or ocean-voyage would be a part of every vacation for me if I could always have my choice. Nothing can take the place of that cool, clear, ozone-laden air. I am never quite so happy as when I am at sea either on fresh or salt water. I have made good use of both oceans and all the great lakes, and I always returned full of regret that I had not more time. We, of Chicago, are highly favored in having a magnificent body of fresh water at our doors, with the thousands of miles more in direct connection with it. There is no finer field for vacation voyages than the St. Lawrence chain of inland seas and rivers. The wonderful clearness of Lake Superior, where the bottom often is visible at fifty feet; the grand scenery of its shores; the beauty of the 30,000 islands of Georgian Bay; the falls and rapids of Niagara; the fairyland of the Thousand Islands of the St. Lawrence; the sublime rapids of the same river; the historic interest and quaintness of Montreal and Quebec; the gloomy grandeur of the Saguenay; these are but a few of the things that make the St. Lawrence a king among rivers.

I have spent more vacations at Mackinac Island than at any other place, except the country of my boyhood. It is an ideal spot for a vacation. One can have a fine lake voyage going and coming. The climate is always delightfully cool in the hot months of summer and very nearly hay-fever-proof. The air is clean and full of ozone. There is no noise and no rowdyism. The beauty of its forests is unsurpassed. It has many objects of geological and historical interest. One can have plenty of society or complete solitude, as one lists. Near by, is a fisherman's paradise in the Cheneaux Islands (often miscalled the "Snow" Islands). It would seem that no one with the usual human interests could possibly suffer boredom at Mackinac.

I have very pleasant recollections of a unique vacation I took in 1895. The previous winter, riding on a certain railway line, my leg was injured, causing me some suffering and also loss of time. When it came to a settlement, I suggested to the officials that I was not after money, but, that I had long wanted to make a geological trip over the country covered by their lines and that I should appreciate transportation the following summer in vacation time. The company responded so generously that I was able to go virtually everywhere in Wisconsin, Minnesota, Dakota, and Manitoba. A few years before that, I had been severely bitten by the

geology-bug and had contracted a special mania for glacial geology. The region indicated is one of the most interesting in America from this point of view, so, I spent three happy weeks in looking up the traces left by the stupendous glaciers of the Ice Age, and I can say without exaggeration that it was one of the most fascinating explorations I ever made.

I may remark, in passing, that every doctor, indeed, every man who takes pleasure in the study of nature, ought to take an interest in this subject. Glacial geology is simply a study of the traces left by the glaciers of the Ice Age, when the frigid zone extended as far south as the Ohio River. It is the easiest of all the sciences, and the material for its study is to be found on any railway-journey or trip across the country. No other science gives one such an idea of the stupendous and overwhelming operation of the forces of nature as this. In truth, these geologic studies have added greatly to the pleasure of every vacation that I have taken during the past twenty-five years. It requires comparatively little book-study—just enough to suggest what to look for. And these evidences are so easy to discover that not only he who runs may read, but, he who rides on a swift railway-train may do likewise.

A trip to Alaska affords a splendid opportunity for the study of this science, for, here can be seen the Ice Age in actual operation in the magnificent glaciers of that territory.

Summary

To sum up the elements of a good vacation in a few words, I would say:

1. Leave business, care, and worry at home. Forget them.
2. Resolve to have a good time.
3. Resolve to help your fellow traveler have a good time.
4. Pay no attention to petty discomforts met. They are part of the price. Above all, don't speak of them. The Lord deliver us from a complainer on a vacation.
5. Live the simple life—out of doors.
6. Don't read much. Give your eyes a rest.
7. Study nature—plants, animals, rocks.
8. Don't smoke more than ten cigars a day.

[*To be continued*]

2920 Warren Ave.

The Home Treatment of Tuberculosis

Based upon Early Diagnosis, Fresh Air, Nourishing Food, Physiological Rest, Strict Cleanliness, The Comforts of Home, and Proper Medical Treatment

By J. M. FRENCH, M. D., Milford, Massachusetts

IN the May, 1917, issue of CLINICAL MEDICINE (p. 338) there appeared an editorial under the caption "The Diagnosis of Early Pulmonary Tuberculosis," which impressed me so strongly that I feel like adding a word in the same direction, with, however, especial reference to the treatment.

We all recognize the importance of the early diagnosis of pulmonary tuberculosis, or, as the editor put it, the diagnosis of early pulmonary tuberculosis; meaning, I suppose, the recognition of the disease in the early stages of its development. Of course, it is a self-evident fact that the sooner the condition is recognized, the less inroad it has made upon the system, the better is the chance for recovery, and the quicker the recovery can be brought about.

In connection with early diagnosis, comes, naturally, the thought of home treatment. It is better for a large proportion of these patients (better *for* them and more satisfactory *to* them and their friends) that they remain at home, under the personal supervision of their family physician, than that they be sent away to a sanatorium.

Home Treatment Versus Sanatorium Treatment

There is no question but that the sanatorium treatment of tuberculosis-patients has accomplished wonders. The greatly

lessened death rate since the rise and spread of this plan speaks eloquently of this fact. The sanatorium triad of air, rest, and food has saved countless thousands of lives. Nevertheless, I must confess that I have never been a convert to the prevalent doctrine that drug-medication has no proper place in the treatment of tuberculosis. Neither do I believe that institutional methods and the environment of a sanatorium are, necessarily, more favorable to recovery than is the proper treatment in a well-ordered home. There are, it is true, certain facts in relation to the disease—such as the methods of becoming infected and of infecting others, and the knowledge of how infection may be avoided, of the importance of fresh air and how to enjoy it without danger, the need of rest and proper nourishment—which it is important for patients to know, and which, as a general thing, they do not understand until they have been taught them in a sanatorium or by the physician or nurse at home. There is, however, nothing difficult to understand about these things; it is the physician's business to know them, and they can be taught as well at home as in an institution. Moreover, it is hard to get in an institution the home-feeling and the cheerfulness which comes with home and friends; and homesickness constitutes an effective bar to recovery.

Essentials

Given, then, a patient of ordinary intelligence, who has confidence in his physician and is willing to put himself unreservedly in his hands, as he would put himself in the hands of the sanatorium staff; and given also a physician who has made himself properly familiar with the treatment of these cases and is willing to undertake the responsibility of the case and to make it his business to cure the patient if a cure is possible; given, also, that moderate degree of financial ability which is needed to supply the needs of the patient—given, I say, these things, and I believe that the tuberculous patients can be treated successfully at home, and that, with the advantage of an early diagnosis and an early start in the treatment, a larger proportion of them can be cured or permanently benefited, and that the improvement will come at an earlier stage of the disease, when less damage has been done to the system, than can be accomplished by the usual treatment at the best of sanatoriums.

Since tuberculosis is a disease of innutrition, with its most common early manifestation in the air-passages, it stands to reason that fresh air and nourishing food are the first essentials of treatment. This is universally acknowledged today. It does not follow that feeding can not be carried to excess and so injure rather than benefit the patient; nor that drafts, cold, damp winds, and sudden changes in temperature may not undo all the good that comes from fresh air. As a matter of fact, I believe that much nonsense has been preached and practiced about fresh air and forced feeding. Fresh air in itself is a good thing, but, harm may come to the patient even along with fresh air. Good feeding is necessary, but, not every kind of food, nor feeding all the time, nor feeding more than can be utilized. Not what is put into the stomach, but, what is digested and assimilated is what makes good blood and good health.

Not all patients are benefited by the same kind of treatment, even when the general symptoms are similar. It is one of the advantages of home treatment that the patient is more likely to be treated as an individual, instead of as a "case"; as a unit, not as a part of a mass.

Some climates and localities are more favorable to consumptives than are others. Thirty years ago, I made a careful study of the death rate from consumption in different localities in the state of Massachusetts, dividing the state into five districts, upon the basis of topographical features, chiefly altitude and soil moisture. The results obtained pointed plainly to the conclusion that a moderately high altitude, with dry air and soil, tends to lessen the death rate from consumption, while the opposite conditions tend to increase it. Experience since that day has shown that sleeping in the open air in those climates that will permit of it is of great benefit to the consumptive.

Acting upon the strength of such conclusions as these, many consumptives have left their homes and gone into a distant country, seeking relief and cure from a more favorable climate and the outdoor air. In too many cases, especially advanced ones, this plan has proved a delusion and a snare, and the poor wanderer has died far

from home and friends, and died sooner and in far more discomfort than if he had remained at home.

Dr. Alcott's Personal Experience

Since debility always is present as the result of a tuberculous condition of the system, rest is an essential part of any effective treatment and must be provided in proportion to the extent of the debility. Yet, in all except far-advanced cases, alternate rest and exercise is better than continued rest. In my schooldays, I read a most inspiring story that was told of himself by Dr. William A. Alcott, a noted New England physician, teacher, and writer of the last century, which taught a lesson of interest to all consumptives.

Soon after having been graduated in medicine, finding himself likely to fall a speedy victim to that dread disease, consumption, and having, as he says, "all he could to do keep up a successful war with cough, night-sweats, purulent expectoration, and hectic fever," he resolved, after careful deliberation, to leave his home and strike out for himself, choosing a course which he well knew must result either in speedy improvement or early death. Going far out into the open country, he found a lodging-place where air was plenty and the sun was hot, and set out to walk from place to place, climb the hills, and take short, but gradually lengthened walks, and eating only what he found in the homes where he lodged. He had a hard struggle at first, but, he never lost hope nor the will to press forward.

Gradually he found his symptoms remitting—less cough, less fever, less expectoration and night-sweats. Soon he was able to work a few hours each day and eventually, by virtue of a strong will, hard work, and outdoor living, with only such food as he could eat with an appetite, he was so far restored as to be able to spend a life of more than three score years in the service of mankind—eventually dying, it is true, from the dread disease which he had fought so long and so well. Doctor Alcott's book, "Forty Years in the Wilderness of Pills and Powders, or, the Cogitations and Confessions of an Aged Physician," has stood for me, in all the years since first I read it, as proof that man, himself, by virtue of his mind and will, has much to do with settling the question of whether he shall live to a ripe age or die prematurely. A strong mind, a hopeful spirit, good cheer, and steadfast determination will do wonders; and, although consumptives are proverbially hopeful, yet, even here these things do tend toward recovery. [Doctor Alcott's experiences vividly bring to mind those recorded more recently, by the late Dr. E. L. Trudeau in his autobiography.—ED.]

Next to these fundamentals, come cleanliness—which we call asepsis—and the comforts of home. The first of these may, perhaps, be looked upon as indigenous in a sanatorium, though, as a matter of fact, it is far from always being so. However, the comforts of home are not as a rule found in a sanatorium or in any institution of the ordinary type. Indeed, they seldom are to be found anywhere except at home. Good beds, sunshine and shade, pure water and good food, cleanliness, rest when tired and exercise when rested—all these, together with the presence and encouragement of one's own family friends, giving hope, cheer, and contentment—these, I say, are the things that contribute to recovery so long as there is any chance of recovery, and, when even this is gone, still leave the confidence that nothing has been left undone and the knowledge that, when one comes to go down into the valley of the shadow of death, he will not have to walk the weary way alone, but, will have the comfort and support of father or mother, wife, children, loving friends all the way.

As for Medicinal Measures

When it comes to medicinal treatment, we have the digestants, such as pepsin, pancreatin, papain, bilein, and other well-known agents. Especially will these be needed when forced feeding is practiced; but, they fill an important place, in any event. Such digestive tonics as berberine and hydrastine, and such nerve-tonics as strychnine and brucine, and such agents for activating the phagocytes and strengthening the defensive forces of the system as nuclein and lecithin; iodine in various forms, specially as iodized calcium or calcidin, all these are of value in a large proportion of cases.

As a direct remedy for the tuberculous condition itself, I know of no better remedy than creosote. This is, indeed, no new thing, but, has been advocated and endorsed by a long line of medical worthies in many countries and throughout many years. Creosote was advocated for phthisis

by Reichenbach as long ago as 1833, by Bouchard in 1887, and since these dates by such men as Dujardin-Beaumetz, Dieulafoy, Germain Sée, Von Brun, Powell, Burney Yeo, Solis Cohen, Sajous, besides many others, all of whom agree as to its utility, although differing somewhat as to their explanation of its mode of action.

Shoemaker states that this agent has come into general use in the treatment of phthisis. It diminishes cough, expectoration, fever, night-sweats, and diarrhea; it has a soothing effect upon the stomach, checks fermentation, allays irritation, and controls vomiting.

Sajous classes creosote as an agent which enhances the nutrition and protective efficiency of the lungs. He considers it a valuable remedy in the first and second stages of tuberculosis, except when the element of asthenia is marked. In therapeutic doses, it excites the test-organ, thus increasing the autoantitoxin in the blood, and simultaneously depresses the sympathetic centers. The arterioles being dilated, an excess of blood rich in autoantitoxin is admitted into all the capillaries, including those of the diseased area, and the curative process is hastened.

Creosote is eliminated from the system chiefly by way of the lungs and bronchial mucous membrane, and to some extent also by way of the kidneys. By the former route, it acts as a stimulant to the bronchial secretions and as a sedative of bronchial irritation; while by the latter it serves as a sedative of the entire urinary tract. Its slow solubility and deficient absorbability also cause it to be carried into the intestines, thus rendering it an efficient intestinal antiseptic.

Value of Creosote and Calcium

Creosote is employed in many different forms and preparations. It is administered in the form of pills, of tablets, and of solution. Pure beechwood creosote is considered a desirable preparation, while in some conditions the active principle, guaiacol, is superior. I have had excellent results, especially in pneumonia, from the preparation known as thiocol, which, chemically, is a guaiacolsulphonate of potassium, and may be taken in large doses without irritating the stomach.

But, the preparation which I have used with the greatest satisfaction in bronchial diseases and in incipient and early tuberculosis, is the combination of lime and creosote known as calcium creosote or calcreose. This has seemed to me, not only the most acceptable to the stomach (with the possible exception of thiocol) but, the best in the entirety of its effect. It evidently owes its virtues, not only to the creosote, but, in considerable part, to the lime.

The special advantages of calcium in tuberculosis are indicated by the fact that it has been demonstrated by clinicians that calcium starvation is one of the prime factors in the etiology of this disease. See articles by Van Giesen and Lynch, in *The Medical Record* for November 27, 1908, and July 9, 1909, in which they show that lime-starved dogs fall easy victims to bovine tuberculosis, while the addition of calcium to their diet cuts short the progress of the disease, so that they gain in weight and are restored to health.

It is well known that calcium is an essential factor in forming the fibrin of the blood, and also that the healing of tuberculous foci in the lungs is essentially a process of calcification. Indeed, so long ago as my school days in the University of Vermont Medical College, Dr. Walter Carpenter, the professor of practice of medicine, used to tell us of the large number of cases of healed tuberculosis of the lungs that were revealed by autopsies, and which were characterized by spots of calcification in the lungs; and he taught us that, wherever in the lungs the process of calcification was set up in a tuberculous lesion, that was the beginning of the healing of that lesion.

In this fact, there no doubt is to be found the reason why calcium adds so materially to the value of creosote in the treatment of tuberculous and bronchial diseases in general. For, calcium creosote is of value, not only in tuberculosis, but, in pneumonia, chronic bronchitis, and many forms of cough as well. I have used it for a good many years in chronic bronchitis with excellent results, finding it to loosen and lessen the cough, while at the same time it acted as a tonic to the nutritive system in general.

Since innutrition is an essential element of tuberculosis, the fact that calcium creosote is a valuable gastrointestinal tonic and antiseptic adds greatly to its utility in tuberculous conditions.

A medical friend whom I had known intimately for a long time suffered for a

number of years from severe hyperchlorhydria and other clinical symptoms suggesting gastric or duodenal ulcer. By careful diet and prolonged rest, he recovered sufficiently to be able to resume his professional work. One day, after cranking his motor car, he had an attack of pulmonary hemorrhage, and this recurred several times within the next year or two. Knowing the seriousness of his condition, he kept it, and himself, well in hand, and by care and appropriate medication was able to carry on a thriving practice, serving on the medical staff, qualifying and serving as roentgenologist in the city hospital in a New England city, and continuing his usefulness in many ways. It was while telling me of his condition one day that he remarked incidentally that he did not think he would be alive had it not been for calcium creosote, or calcreose, which he had taken continuously for a considerable length of time.

Coming from a man in whom I had the utmost confidence, this seemed to me a strong testimony, and led me to use the remedy increasingly in my practice; and, while I do not claim for it any other effects than those indicated by its proven physiologic and therapeutic properties, yet, I feel that my experience has justified his high estimate of its value in these directions. That he finally succumbed to his dread malady, does not detract from the value of the remedy which lengthened his life, increased his comfort, and added to his usefulness.

Summing up, it seems to me that the home treatment of tuberculosis is indicated (1) when there are no children in the family or the conditions are such that they need not be exposed to the contagion; (2) when the patient and his friends are of sufficient intelligence to cooperate with the physician in carrying out the details of the treatment; (3) where there can be adequate medical and nursing-service for a sufficiently long period of time; (4) when there are facilities for proper outdoor life under favorable hygienic surroundings.

The Treatment of Chronic Diseases

Diseases of the Nervous System

By GEORGE F. BUTLER, M. D., Wilmette, Illinois

(*Continued from July issue, page 513*)

THESE special paralyses are all forms of acute or chronic peripheral neuritis, either of the true peripheral or of the nuclear type. If they are nuclear, they are always the expression of some underlying condition of the central nervous system, the treatment of which is the treatment of the neuritis. If they are sheerly peripheral, then their treatment is precisly the same as that of simple neuritis, to which the reader is referred.

Landry's Paralysis

(*Acute Ascending Paralysis.*)

The pathology of this disease is that of a combination of acute myelitis and neuritis, of a very virulent and rapid type. The treatment is the same as that of acute myelitis and neuritis. Treatment rarely avails, however, as the process quickly involves the bulbar region and death occurs because of interruption of the respiratory function.

Degenerative Diseases

The degenerative diseases of the nervous system admittedly are a more or less hopeless class of ailments—a character which they share in common with primary degenerations of all tissues and organs, just as they share their essential pathology, namely, a primary degeneration of the tissue proper and its replacement by connective tissue. The prognosis is not very bright, even under the most favorable conditions, and under the most intelligent treatment. Degenerative processes have a disagreeable way of progressing in spite of anything that may be done to check them; the humiliating truth being that we seldom succeed in making any impression upon their course.

Still, for all that, it is neither scientific nor professional to stand aside, with a

shrug of the shoulder, and let things take their course. The ideal of a physician, to be sure, is, to cure disease. However, ideals not always are attainable. It is the duty of the physician to ameliorate where he can not cure and to limit where he can not altogether check the ravages of disease. And this he will most effectually accomplish, not by a "masterly inactivity" or by the senseless iteration of a wornout formula, but, by an active, intelligent, resourceful application of well-defined therapeutic principles, both abstract and concrete, to the pathology of the condition in question.

In this class of diseases also, the old-line plan of treatment shows a negligent disregard, if not a positive repudiation, of the morbid physiology of the case. The mainstay of its therapy is, direct stimulation, as represented in the habitual use of strychnine. Just what beneficial influence such a therapy can be expected to exert upon a tissue that is being slowly replaced by connective tissue, it is hard to understand. It only can stimulate the remaining tissue to greater activity and thus hasten its doom, meantime keeping the patient "on edge." If, therefore, this modest treatise should accomplish no more than to discourage the routine use of strychnine and kindred drugs in these diseases, it will not have been written in vain.

The rational therapy of degeneration is alterative, reconstructive, and antispasmodic. The threefold purpose is, to check interstitial hyperplasia, to assist in building up (not whipping up) the enfeebled tissue in a condition to degenerate, and to give the neurons physiologic rest.

The first two indications have long been therapeutic bugbears; but, the feasibility of meeting them has, more recently, been greatly enhanced by the fortuitous addition of two notable remedial agents to our materia medica, namely, chromium sulphate and lecithin. As to the first one of the substances just named—chromium sulphate—it has been shown that it exercises a remarkable power of checking interstitial hyperplastic degeneration that is far superior to that exerted by gold; while the other—the lecithin—is known to furnish an important element in the upbuilding of nerve-tissue and in fortifying it against degenerative tendencies. These two agents play a large part in the therapy laid down in this article.

The degenerative group of nervous diseases includes the following heads, under which they will now be discussed in detail: Cerebral hemorrhage, cerebral embolism, cerebral abscess, cerebral tumor, general paresis, chronic myelitis, locomotor ataxia.

Cerebral Hemorrhage
(*Apoplexy.*)

Although cerebral hemorrhage is classed as a degenerative disease, because the underlying pathology is a degenerative process, it is to be remembered that the actual attack usually is the consequence of an acute congestion, and, therefore, requires treatment similar to that of encephalitis.

When seen immediately after the attack, while the temperature still is elevated, the pulse full and bounding, the face flushed, and other symptoms of active congestion are present, the patient should be placed in a recumbent posture, with the head slightly raised, cold (but, not iced) applications made to the head and hot applications to the hands and feet, care being taken, however, not to burn the skin, bearing in mind that the patient is quite unable to protect himself against undue heat. A sharp purge, or, better still, a soapsuds enema, thoroughly to clean out the bowel, followed by a stimulating enema of warm water with a little mustard in it, will greatly assist in drawing the congested blood away from the head. Inasmuch as nearly always the patient is unconscious, whatever internal remedies are given must, as a rule, be administered hypodermically or else per rectum. Atropine, 1/250 grain every fifteen minutes, is good treatment. But, in my experience, veratrine and aconitine are the drugs, *par excellence*, for this condition. Both of these, in doses of 1/150 grain each, may be given hypodermically; however, they are likely to cause considerable pain when administered in this way; hence, equally good, if not quite as prompt, results may be obtained by giving them in double or treble the dosage, in warm water, per rectum. They should be repeated every half hour until the pulse softens and shows a return to normal.

As soon as reaction begins to set in—as evidenced by the return of the patient to consciousness, the dropping of the tem-

perature, the weakening of the pulse, the pallor of the face, et cetera—all of these defervescent measures should at once be discontinued and the condition of the patient carefully watched, to see to it that collapse does not occur. It is well at this stage to forestall such a possibility by giving small quantities of hot weak tea at frequent intervals. Whisky and brandy, so commonly advised and given in these cases, are bad; first, because they often overshoot the mark and bring on another inflammatory attack, and, second, because they are followed by a reaction of their own later and increase the liability to secondary collapse. If the threatened reaction be serious, a little strychnine may be given; this to be discontinued, however, as soon as the danger of collapse is averted. In short, the successful knowledge of what *not* to do, rather than being in too great an eagerness to *do* something, is what counts; the danger of bringing on another hemorrhage being, as a rule, much greater than that of collapse.

The After-Treatment

The after-treatment of these cases requires great nicety of judgment. The general indications, of course, are, to assist in the absorption of the clot and to reduce and keep down the blood pressure. But, as many of the instances of cerebral hemorrhage occur in enfeebled elderly persons, it is not always wise or practicable to carry out a course of absorptive and eliminative treatment that would be lowering to the general health. Where the patient is middle-aged, plethoric, and sthenic, one hardly can be too rigorous in the restriction of the diet or too energetic in promoting elimination, for, his future safety depends upon preventing the accumulation of autotoxines in his blood. Such patients should be kept upon a dietary as low in nitrogen as is consistent with the barest protein nutrition. Even sweet milk is undesirable; buttermilk, on the contrary, is excellent when taken in moderation. They should avoid coffee, alcohol, sugars, and all stimulating condiments, but, drink freely of mild citrous fluids and eat mildly acid fruits. For long periods at a time, they should take a mixture of tincture of nux vomica and tincture of colchicum (say, 3 drops of each in infusion of gentian), before meals; also a saline laxative every morning on arising.

In aged or enfeebled patients, the treatment must be somewhat different, albeit as far as possible upon the same general principle, that is, the avoidance of autotoxemia. In dietary, the aim must be, to nourish, while producing a minimum of waste matter. Broths, meat-juices, eggs, buttermilk, lean meat, cooked fruits, green vegetables, and the like are easily digested and fully utilized, with but little by-produce. As with children, so with old people, the less medicine they take, the better. Colchicum is, as a rule, too violent an eliminative for them. A little nux vomica before meals is an excellent stimulant to promote elimination and metabolism. A 1-grain pill of phenolphthalein should be given every night or two, followed by a dose of sodium phosphate in the morning. Frequent sponge-bathing is an essential to proper elimination in old persons.

For promoting the absorption of the clot, I have found the following combination more effective than anything else I have tried: Mercury biniodide, arsenic iodide, extract of phytolacca, and iodoform. The quantities and proportion of this combination are to be varied according to the age and condition of the patient.

In the comparatively young and sthenic patient, every one of the ingredients may be given to the limit of tolerance. In older and feebler patients, the dosage of all the components must be considerably smaller, especially that of the iodoform and phytolacca, which are not well tolerated, while that of the arsenic iodide may be proportionately a little larger, since it is an alterative tonic well borne by old people. Under this remedy, absorption usually proceeds as rapidly and as far as it is possible to occur; and it is really surprising to see the improvement that takes place in the focal symptoms. But, of course, we cannot expect, even at the best, to obtain more than fifty or sixty percent of restoration in the impaired neurons.

In severe cases, where the hemiplegia is extensive and profound, there naturally is great danger of muscular contractures during the period of neuronic restoration. To avoid this, the muscles should be systematically massaged and also the galvanic

current applied, with one pole on the cord and the other on the various muscle groups. A moderate, preferably ascending, current should be employed, and violent alternations and reversals avoided. It is, in fact, well to make this a routine practice in all cases of apoplexy, whether severe or mild.

Cerebral Embolism and Thrombosis
(*Softening of the Brain*)

Except for the congestion and violence to the brain-tissues which attend cerebral hemorrhage, the pathology of cerebral embolism and thrombosis is practically the same as that of the former disorder, and the treatment, therefore, is the same.

The shock of embolism is a negative shock, clinically comparable to the reaction after a cerebral hemorrhage; hence, if any treatment be applied at all to this phase of embolism, it should be the same mild stimulation that is recommended in the reaction of apoplexy. Thereafter the management of the case is precisely the same as that of the after-treatment of cerebral hemorrhage. Cerebral thrombosis is attended by no sudden onset, of course, but, is gradual and progressive. As soon as the diagnosis is established, the absorptive and eliminative treatment outlined under cerebral hemorrhage should be instituted. Of all three conditions, thrombosis is the most hopeless. No known treatment will arrest the degenerative process. The most we can hope to do is, perhaps, retard it a little, and to make the patient's condition as comfortable as we can for the remainder of his life.

Cerebral Abscess
(*Suppurative Encephalitis*)

For this condition, there is absolutely no available treatment but surgical intervention. The skull must be trephined and the abscess drained; and the earlier this is done, the better the outlook for recovery. For particulars of this procedure, the reader must refer to a work on surgery. If, for any reason, it is not justifiable or practicable to operate, nothing is left to us but the most sheerly symptomatic treatment, of which the chief feature is the relief of the pain by means of opiates and bromides.

Cerebral Tumor

Cerebral tumor, the same as cerebral abscess, admits of no treatment but that of surgical removal. However, inasmuch as it is not possible to tell, with any degree of certainty, whether or not the supposed tumor is a syphilitic gumma, it is advisable to try the effect of antisyphilitic remedies before resorting to operation. Mixed treatment should be prescribed, consisting of intramuscular injections of cyanide of mercury alternating with intravenous injections of salvarsan, and, later, large internal doses of potassium iodide, of 30 to 40 grains a day. In the majority of cases, it will be found that this treatment has no influence, for the simple reason that, as a rule, the tumor is not syphilitic. It then becomes a surgical question, of opening the skull and either removing the tumor or simply making a decompression-operation, for the relief of the intracranial pressure. If, for any reason operative interference can not be availed of, the patient must be treated symptomatically, as in cerebral abscess, with narcotics and sedatives. If convulsions occur, inhalations of chloroform should be resorted to.

General Paresis
(*General Paralysis of the Insane. Dementia Paralytica*)

This disease is now universally regarded as a sequel of syphilis, and it is, therefore, customary to give injections of salvarsan, and to push mercury and iodides in the early stage. For the obstinate insomnia and headache in the incipient stage, sulphonal and trional are the best hypnotics, although in the severer cases we often are obliged to administer morphine and chloral. For the occasional attacks of acute mania, morphine and hyoscine should be employed in full doses. However, for the disease itself, no known remedy is helpful, and the treatment resolves itself into a care of the patient's person until death closes the scene. As the dementia deepens, this task becomes more and more trying; consequently, these patients should be removed to an asylum. Occasional periods of improvement quite often are seen under intelligent care, but they rarely are permanent, and death invariably occurs in from one to three years from the onset of the disease.

Chronic Myelitis

Whether it be the sequel of an acute attack or a chronic process from the beginning, the chronic form of myelitis is not, properly, an inflammatory disease, as its

name implies, but, a degenerative one. It is, in fact, perhaps the most typical of the degenerative diseases of the spinal cord, and its treatment and management may equally stand as representative for all chronic diseases of the cord.

The chronic myelitic patient should, from the onset of the trouble, avoid all physical overexertion and arrange his affairs so as to enjoy the greatest degree of mental rest. In severe cases, of course, he will be bedridden, and in that event the greatest care must be exercised to guard against bedsores. He should, if possible, lie upon a water cushion, his position frequently changed, and the pressure-areas washed with alcohol. At the least appearance of bedsores, these should be anointed with Peruvian balsam ointment (1 in 30), or covered with a salicylate plaster. If the bedsores become very extensive, the patient must be kept in a continuous bath.

The pains of chronic myelitis are not, as a rule, severe, at all events not in the early stages, and seldom require any very special treatment. Both the pains and the general spasticity are best controlled by bathing. Indeed, baths form an important and valuable item in the treatment of this disease, provided they are employed intelligently. The essential precaution is, to accustom the patient gradually to them, giving them at first no oftener than two or three times a week, limiting their duration to about ten minutes, and taking care that the water is not too warm (not more than 80 or 90 degrees). Their frequency and duration may gradually be increased, but, the temperature should never exceed that mentioned. The efficacy of the baths often is enhanced by the addition of salt to the water; also, by carbonic-acid gas.

Following the bath, a skilfully executed massage is beneficial; however, unless it can be given by a skilled masseur, it might just as well be omitted, for, the amateur rubbings of lay attendants are quite useless. Electricity, also, has an important and valuable place in the treatment, although, of course, too much must not be expected from it. It ought, however, to be tried in even the most apparently hopeless cases. Galvanism, here, is the best modality to employ, applying large electrodes over the spinal column and alternating the two poles on the diseased part. In addition to this, the peripheries should receive galvanic treatment, and, where the muscles respond to the faradic current, this also should be employed. Only a moderate current, stabile or labile, should be used. The sittings should take place daily and be kept up for several months.

Medicinal treatment must be directed toward arresting, if possible, the degenerative process, giving the neurons physiologic rest and building up the nerve-tissue. For the first of these purposes, chromium sulphate is the best drug. It should be given in 4- or 5-grain doses three times a day and persisted in as long as it appears to exert any good effect. For the second object, no drug is equal to gelsemium, in 2- to 5-minim doses every six hours. If the restlessness and sensory discomfort be extremely marked it may be combined with small doses of hyoscine, say, 1/500 grain. The third end is attained by the use of nuclein and lecithin, with which may also be given very small doses of arsenic, in the form of Fowler's solution, in not more than 1-drop doses twice a day. The ordinary stock "tonics"—iron, quinine, strychnine—have no place in the treatment of these patients. Their diet should be nourishing, but, simple and easily digested. Careful attention must be paid to elimination and especially to the avoidance of autotoxemia. It is well to prescribe an occasional course of colchicum and nux vomica, with some laxative saline the first thing in the morning. Their diet should include plenty of citrous fruits.

When the bladder is paralyzed, as it ordinarily is, it is necessary to employ the greatest care in keeping the urinary tract aseptic. The catheter must be scrupulously cleaned and disinfected, and the urine, itself, made aseptic by the administration of hexamethylenamine, salol or uva ursi. The latter has proven best in my experience, because it can be given for long periods without causing irritation of the membranes. It may be given in 15- to 20-drop doses of the fluid extract (or 2 grains of arbutin). If the paralysis is peripheral, so that there is incontinence of urine, some arrangement must be devised to drain away the urine without allowing it to erode the skin of the perineum and thighs. The first indication of cystitis must be energetically combated by washing the bladder out.

[*To be continued.*]

Sleep—That Knits the Raveled Sleeve of Care

By EDWIN F. BOWERS, M. D., New York City
Author of "Bathing for Health," "Zone Therapy," etc.

SLEEP is the most important thing in the world. More important even than food. For, we eat to sleep—but, we sleep to live. Men have gone sixty-three days without food and a week without water—but, they cannot last more than ten days without sleep.

Loss of sleep causes a form of starvation, for, the food we eat is digested and transformed into new muscle, brain, blood, and nerve-cells only while we are asleep. Endurance-racers prove this. Those engaged in six-day bicycle-races and other witless forms of diversion eat four or five times as much food as does the ordinary man. Yet, the end of the contest finds them hollow-eyed and cadaverous. Loss of sleep—more than physical exertion—prevents them from transforming food into tissue.

Sleep recharges the exhausted body-batteries and fills the organic furnace with fresh fuel. Sleep is a positive process—not a negative one. It isn't merely a stopping of bodily activity. It's the substitution of a constructive process for a destructive one.

Only while we are unconscious do we fully recuperate. The deeper the sleep, the quicker the recuperation. The lighter and the more disturbed the sleep, the more we need of it—the longer it takes to effect repair.

Active Waking—Restful Sleep

An active, energetic waking life helps to bring about restful sleep. A sluggish, inactive existence tends to unrefreshing sleep and insomnia.

The constructive building-value of sleep explains why babies—whose chief business in life is to grow—spend sixteen or eighteen hours a day sleeping, and even then some of them do not get enough. The aged, whose building powers are low, sleep lightly and waken early. They do not stay awake because they do not need sleep, but, because they cannot get it. They have lost reconstructive power. Their daytime dosings and drowsings are not really sleep. They are torpors from exhaustion—poisoning from faulty elimination.

The quality of sleep is everything. An hour's nap, under favorable conditions, is more reconstructive than an entire night's restless, dream-ridden sleep.

Many who sleep "deep" are able to do with four or five hours of it—while light sleepers might require twelve or thirteen hours to gain the same degree of recuperation.

Nine hours of sleep is a fair average for a healthy man—a half hour or an hour more for a woman. The sleep period represents the time required to restore the oxygen balance in the tissues and to recharge the batteries. Hence, it should last until the process of restoration is completed.

Do not try to emulate the pernicious example of Napoleon. The Duke of Wellington, Thomas Edison, and others who have abused their constitutions by staying awake when they should have been asleep. "Go to sleep when you're tired, get up when you're rested." That's the only proper universal rule. When you're rested you'll awake. In fact, you couldn't sleep any more—just then—even if you wanted to. And, have no fear of injuring your health by oversleeping. No one yet ever got too much good natural sleep or did his health any harm by staying in bed until he felt rested. But, if you don't feel rested, there's a cause for it. Either there's something wrong with your bed, or you're not getting oxygen enough—your bed-room is stuffy or ill-ventilated—or you are anemic, rundown, and debilitated, and should see a doctor.

To spend more energy, especially nervous energy, in a day than you can restore in a night's sleep, is, to be headed for physical bankruptcy. Even the loss of one night's sleep affects the nervous systems of many. It causes sleepiness and mental irritability. Food does not digest so well. There is a general lack of "punch" that usually takes

more than a good night's sleep to build back.

Modern conditions, with their anxieties, cares, and hurries, are causing much nervous instability—directly traceable to lack of proper sleep. Never before was there a time when people needed to sleep so long and so "hard," in order to build up vitality wasted in our intensive methods of living, than right now.

The man who continually loses in the quantity or quality of the sleep he requires is laboring under a handicap that will diminish his chances of success in life. The woman who habitually is disturbed in her rest and in its duration will make a failure of her family.

Get all the sound, restful, refreshing sleep you can in a bed that invites repose and relaxation, preferably made of metal, and best to be used only by one sleeper at a time. For, the principles of hygiene are best served when every individual has a bed to himself. Personal contact interrupts the function of sleep. Sleep then is never so restful, because the restlessness of either of the sleepers is communicated to the other. It "lightens" their sleep and retards the building-up process. Then, also, everyone knows how infections—such as colds, sore throat, and coughs—are communicated by sleeping in the same bed with one so afflicted.

The constant exchange of magnetism with one who shares a bed tends also to create apathy and a distate for contact—and something of the elusive charm and mystery of sex-aloofness is brutalized or lost thereby. For children to sleep with the aged—to whom they constantly lose magnetism and vital force—is a crime against the child. The facts of such loss are admitted by every competent medical man—the principle has been recognized from time immemorial. The Bible mentions the ancient King David, to whom was given a youth, to supply him with vitality. Only thirty years ago, certain institutions, founded upon the same principles, existed in France. Young girls and boys were supplied to old women and old men as bedfellows. Almost without exception these young folks lost in vitality—some actually sickening. The evil effects of this strange sale of life-force were so marked that the institutions were finally closed by police order. This same loss in vitality is responsible for much of the nervousness, irritability and weakness that affects American women—for the reasons just mentioned.

And, while fortunately such accidents occur infrequently, many instances are known in which mothers, during sleep, have rolled over upon their babies or young children and smothered them. Such an accident is liable to occur any time, to any mother who sleeps in the same bed with her child.

So, separate metal beds for every sleeper are as necessary as are separate dishes for every eater. They promote comfort, cleanliness, and the natural delicacy that exists among human beings. Sleep becomes more relaxing and, therefore, more reconstructive—next to consciousness itself, the most wonderful and healthful thing in life.

Some Statistical Notes on Tuberculosis*

By HYMAN I. GOLDSTEIN, M. D., Camden, New Jersey

IT IS impossible to make a statistical study of the incidence and mortality of tuberculosis over an extended area of the United States for any considerable period of time—because of the absence of reliable vital statistics. Up to the year 1910, the registration area included only eighteen of the forty-six states of the Union.

Statistics have suffered in reputation, because of the seeming truth of the trite statement that you can prove anything by figures. In reality, figures are but evidence upon which conclusions may be based.

Statistics are derived from the collection and numerical classification of observations relating to certain facts or events. In the making of statistics, the first and essential step is, the recording of observations. After the observations have been noted, a numerical compilation of their frequency or of the frequency of certain of their conditions or attributes is possible.

The derived statistics, being but a numerical classification or analysis of the re-

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corded events, depend for their usefulness primarily upon the accuracy of the original records of all the facts. They depend, secondarily, upon the accuracy of statistical classification and compilation.

Sources of error are not few—mortality rates secured by lax enforcement or faulty methods of registration cannot be properly compared with those based upon complete registration. The most common error entering into death registration and, therefore, into mortality statistics is in connection with the statement of the cause of death—which may be a mistaken diagnosis, a desire to avoid giving the correct cause of death or other misstatement.

It is quite safe to assume that in medical practice at large the percentages of correct diagnoses would be found to be even lower than those found by Cabot, whose cases were studied as hospital-cases under conditions assumed to be most favorable for correct diagnosis. (Richard C. Cabot, in *J. A. M. A.*, Dec. 28, 1912, p. 2295.) In 3000 necropsies, Cabot found that the percentage of correct diagnosis in various diseases was as follows: active phthisis, 59 percent; miliary tuberculosis 52 percent; chronic myocarditis, 22 percent; acute nephritis, 16 percent; diabetes mellitus, 95 percent; typhoid fever, 92 percent; lobar pneumonia, 74 percent.

Tuberculosis in the United States

Tuberculosis is one of the most curable of chronic diseases. According to recent teachings, we all have a little tuberculosis. This little tuberculosis, however, in sixty percent or more of the community results only in a beneficent immunity, and it does not, by any means, lead to a fatal issue in all of the remaining forty percent. Those that die of tuberculosis are largely the weaklings, the men of poor development, the dissipated.

Army

According to Bushnell—the results of the examination of the entire army of the United States for tuberculosis—a total of 800,000 men, at the time, showed the number of cases detected as somewhat less than 1 percent of the total number examined. Each tuberculous patient returned from Europe will cost the government about $5,000, and it is a conservative estimate that the tuberculous soldier who never leaves this country will cost on an average $1,000, including pension. If these 7,000 probable cases are detected and if they are all eliminated from the army before they may justly claim pensions as the result of their army service, the saving to the government will be at least $7,000,000. ("Lessons from the War as to Tuberculosis," by Geo. E. Bushnell, M. D., Colonel U. S. Army, *J. A. M. A.*, March 9, 1918).

The Immigration Exclusion Act applying to tuberculous individuals took effect in 1907. This prevents the entrance into the country of aliens presenting obvious symptoms of the disease, and provides for deportation of any who manifest tuberculosis within three years after their arrival. Incomplete as they are, the mortality statistics of the census form the only source of information in regard to the actual prevalence of tuberculosis (and other diseases) in the United States or any considerable portion of it.

For a general examination of the occurrence of tuberculosis, even as restricted to the states of the registration area, it is, therefore, necessary to resort to the compilations made by the Bureau of the Census, which present the data with absolute uniformity so far as method of compilation is concerned, and with all of the accuracy that is obtainable from the original returns. Tuberculosis does not, as a rule, show very marked fluctuations from year to year, and, so, the statistics given for several years back may be taken equally with those for the present as representing existing conditions, with some exceptions. One can not state the total number of deaths in the United States from tuberculosis; but, from a study of various tables, one could state that 150,000 to 200,000 deaths are occurring each year from this disease. For the year 1907, in the then registration area with an estimated population of 41,500,000, or 48 percent of the total population of continental United States at that time—76,650 deaths from various forms of tuberculosis were reported.

Race

The mortality of the colored population is much higher from this disease than that of the white population. The Negro death rate from tuberculosis of the lungs is markedly higher than the white death rate,

not only in cities, but, also in rural districts.

Indians: During 1915, 35.08 percent of all deaths among our Indian population was due to tuberculosis.

The death rate of the total white and colored population of the registration area from tuberculosis of lungs was 158.9 per 100,000 for the year 1917. The death rate of the colored population of rural Maryland is 230.2 per 100,000. It could be fairly stated in 1907 about 190,000 deaths occurred in the United States from tuberculosis or from causes that might be considered or probably were tuberculosis. In 1900, the colored death rate from pulmonary tuberculosis (from the registration area of 1900) was 490.6 per 100,000 of colored population. The white death rate was 173.5. Thus the Negro rate was 182 percent higher.

Decrease of Tuberculosis

For many years, tuberculosis has been decreasing more or less steadily, both in its absolute and in its relative importance, as a cause of death.

The death rate per 100,000 of population from all forms of tuberculosis declined, in the registration area of the United States, from 1880 to 1907.

	Death Rate	Percent of Decrease
1880	326.2	.....
1890	267.4	18.0
1900	201.2	24.8
1907	183.6	8.7

The decline has been especially marked in Massachusetts. In that state, for the period 1851-1860, over a fourth of the deaths at all ages (257.5 per 1000) were from tuberculosis, while from 1901 to 1906 less than one-seventh (131 per 1000) were from this cause.

The annual average death rate of the United States is 169.9 per 100,000 population for the years 1901 to 1905. That of Austria, 334.8; Germany, 185.8; Italy, 114.9; Japan, 146.3; Servia, 279.7; Netherlands, 133.4.

Forms of Tuberculosis

In the registration area of the United States, for the year 1907, the number of deaths from all forms of tuberculosis was 76,650, namely:

Tuberculosis of the lungs	66,374
Tuberculosis of larynx	690
Tuberculous meningitis	4,062
Abdominal tuberculosis	2,629
Tuberculous abscess	65
Pott's disease	594
White swelling	269
Tuberculosis of other organs	713
General tuberculosis	1,254

Nearly 90 percent of all of the deaths from tuberculosis are due to tuberculosis of the lungs.

Sex

During 1900, the death rate of males from tuberculosis of the lungs was 188.4 per 100,000 population, while the corresponding death rate of females was only 163.3. The mortality of males exceeded that of females from this disease by 15.4 per 100,000. This difference has begun to be noticed during the past ten or twenty years and may be due to a progressive tendency among women to live more in the open air than formerly; then, again, tuberculosis affects nutrition, and women are, perhaps, more resistant to conditions affecting nutrition than are men. According to Sir J. A. Baines, in India, "women appear to succumb to famine less than the other sex."

States with a large proportion of urban population will tend to have higher death rates from tuberculosis of the lungs than those chiefly rural in constitution. Thus in 1907, the rates for New York (171.6), New Jersey (170.6), and Rhode Island (163.6) exceeded those for Indiana (140.2), Maine (134.3), and Michigan (88.7).

Age

Approximately 28 percent of the deaths from tuberculosis of the lungs occur between the ages of 25 to 34 years; 21 percent between 15 to 24 years; and 20 percent between 35 to 44 years. Over two-thirds (67.4) of the deaths from tuberculous meningitis are those of children under 5 years of age.

Tuberculosis kills men and women chiefly in the most active, most productive period of life, when their work is worth the most to themselves, to their families, and to the world. Nearly a third (33.2 percent) of all of the deaths (male and female) between 15 and 29 years of age are due to tuberculosis in some of its forms; 38.3 percent of all deaths for females between 15 and 29 years are due to some form of tuberculosis. In *Collier's* for July 25, 1908, (in an editorial, "Expressed in Money"), Hunter has estimated the average cost of pre-

paring a man for usefulness at $1,500. If we could master tuberculosis, the saving in money to the United States would be $330,000,000 per year.

In an article in *The Maryland Medical Journal* for February, 1904, Frederick L. Hoffman, of the Prudential Life Insurance Company, says that tuberculosis causes annually more than 150,000 deaths in the United States, at the average age of 35 years; and that there is a real loss of life, measured in time, represented by 4,800,000 years per annum (at the age of 35 the normal after lifetime being about 32 years). The money value—the loss—may be estimated as over $240,000,000 per annum, according to a pamphlet issued by the Department of Commerce and Labor, 1908, on tuberculosis in the United States. The approximate average age at death of the persons dying from pulmonary tuberculosis in the United States is practically about 35 years, also, of 42,734 deaths of males from all forms of tuberculosis in 1907 (in the registration area), 28.2 percent were at ages 15 to 29 years (inclusive); 14,423, or 33.8 percent, at 30 to 44; 9,679, or 22.6 percent, at 45 to 64 years. That is, from 15 to 44 years (the younger and probably most efficient period of industrial activity), there occurred 61.9 percent (nearly two-thirds), 26,458, of all the male deaths from tuberculosis.

Conjugal Conditions

The lowest rate was that of married women aged 45 to 64; the highest death rate from pulmonary tuberculosis was that of widowers aged from 15 to 44 years. The death rate of unmarried males aged 15 years or over, from tuberculosis of lungs, was considerably higher than that of unmarried females of the same ages. The death rates of married males and married females were about the same—according to census mortality statistics of 1900. The widowed (465) male rate considerably exceeded that of the female (235).

Occupation

The highest death rates from pulmonary tuberculosis per 100,000 (in 1900) were, that of marble-and-stone cutters (540.5), followed by that of cigarmakers and tobacco-workers (476.97), compositors, clerks, copyists (398). Laborers (not agricultural) showed a high rate (370.7), but, farmers, planters, and farm-laborers had one of the lowest rates for males in the list (111.7). Pharmacists have a high rate (over 300). Doctors and surgeons have about 150; bankers, brokers, etc., have the lowest rate, namely, 100. Clergymen, 120.

Among females, servants give the highest death rate (319.7); followed by telegraph- and telephone-operators (205), bookkeepers and clerks (198), nurses and midwives (100.2), school-teachers, 126.1, and the lowest rate by laundresses (94.4).

All occupied males, 236.7. All occupied females, 172.8.

States and Cities

New Jersey: This state was the second state in the Union to collect and record vital statistics, and the records are very complete since 1879. They show a decline in the tuberculosis death rate, though to a much less degree than is the case in Massachusetts. The State Sanatorium, at Glen Gardner, was established in 1907. In New Jersey, the mortality has been steadily diminishing during the past twenty years. This is mainly due to the hygienic revolution which has occurred within that period. In the thirty-one years from 1879-1910, there were 105,200 deaths from consumption, and 60,040 deaths from typhoid fever, scarlet-fever, puerperal fever, whooping-cough, measles, malarial fever, erysipelas, acute rheumatism, and smallpox all combined. The average annual death rate from all causes per 10,000 for thirty-one years was 175.1. The average annual death rate from consumption per 10,000 was 20.96. In 1879, there were 20,444 deaths in New Jersey—2,788 due to consumption—out of a population of 1,020,584. The percentage of deaths from tuberculosis was 27.32 in 1879. In 1909 there were 36,359 total deaths; deaths from tuberculosis were 3,608. Proportion of deaths from tuberculosis to total number of deaths was 9.92 percent. Deaths from tuberculosis per 10,000 population were 15.34, out of a population of 2,352,522. A reduction from 27.3 (1879) to 15.34 (1909) has, therefore occured in New Jersey during thirty-one years.

New York City: In 1881, with a population of less than 1,250,000, New York had a phthisis death rate of 4.27 per 1,000 inhabitants. In 1910, with a population of more than 4,800,000, the phthisis death rate has been reduced to 1.8 per 1,000 inhabitants—a decline in the death rate of tuberculosis of more than 30 percent.

So far as the municipal control of tuber-

culosis is concerned, New York City stands as a world model.*

Massachusetts: This state has kept satisfactory records since 1842. From these records it is learned that the phthisis death rate has fallen more than 54 percent since 1850. The relation between segregation and other state sanitary measures and a declining phthisis death rate is well illustrated by Massachusetts records (and also by those of Germany and Denmark). Massachusetts was the first state in the Union and the first government in the world to establish a state institution for the exclusive care and treatment of tuberculosis. In the three years of 1913, 1914 and 1915, there occurred 12,545 deaths in Massachusetts, due to pulmonary tuberculosis. Of these deaths, 8,713 occurred between 20 and 49 years of age, or, over two-thirds of all phthisis deaths occurred during this most active period of life; 6,371, or over fifty percent, occurred between 20 and 31 years of age.

California: In California, no less than 15 percent of all deaths that occurred during 1907 were from tuberculosis. In Colorado, even more, being 16.4 percent. In Michigan, only 7.4 percent of all deaths were due to tuberculosis, Vermont, 8.1 percent, New Hampshire, 7.6 percent. But, we must remember that consumptives go from New Hampshire, Vermont and Michigan to California and Colorado, and their deaths are charged up against these states. These deaths should be charged back to the states in which the disease originated.

Other Countries

In Ireland, there has been an increase in the phthisis death rate of 18 percent since 1866.

In Scotland, the death rate of phthisis has declined 4.3 percent (according to Herbert Maxon King).

In Germany, there has been a decided fall in the death rate of tuberculosis during more recent years. Germany is the home of the sanatorium. In 1909 alone, insurance institutions provided sanatorium treatment for 42,232 tuberculous patients.

*A very striking example of the effect of destroying a slum district was noted after the great fire in San Francisco. Prior to 1905, the death rate from tuberculosis in that city was 274 per 100,000; two years later it had fallen to 179 per 100,000, and in 1912 to 153 per 100,000. The death rate fell from 4 per 1000 to 1.9 per 1000 in Liverpool—where the government tore down insanitary dwellings and large sections of "slum" houses.

Denmark has always had a comparatively low death rate from tuberculosis. From 1903 to 1907, inclusive, the mortality from all forms of tuberculosis was only 2 per 1000, and from pulmonary tuberculosis only 1.5 per 100. Preventive measures are conspicuously directed to the control of animal-tuberculosis and the prevention of infection from animal sources. These precautions followed (naturally) upon Bang's demonstration that by means of the tuberculin test and isolation of infected cattle animal-tuberculosis could practically be exterminated. Numerous other sanitary measures were enforced in Denmark. No person with open pulmonary or laryngeal tuberculosis is eligible for a situation in the public service, and similar employment.

In England, in 1906, the urban counties showed a death rate from phthisis of 149.3 per 100,000 of population; while the corresponding rate for rural counties was 129.2, the excess of urban mortality being 15.6 per 100,000 living.

Decline in Tuberculosis Mortality Rate

From tables made by Dr. Frederick L. Hoffman, statistician of the Prudential Life Insurance Company, it appears that the actual reduction in the phthisis death rate has been about fifty percent from 1881 to 1910.

Vienna: From 6.85, to 2.74, or, a decline of about sixty percent.

Budapest: From 7.15, to 3.40, or, 52.4 percent.

Paris: An exception—from 4.41, to 3.74, or, only, 15.2 percent.

London: From 2.22, to 1.32, or, [illegible] percent.

During the five years ending 1910, the mortality of Copenhagen, from tuberculosis was 1.36 per 1000; of London, 1.32; of The Hague, 1.24. New York City shows a decline, from 3.98, to 1.97, or, 50.5 percent.

Tuberculosis Among Soldiers

Early in the war, it was reported, on the authority of Landouzy, that during the first year of the war 86,000 soldiers were discharged from the French army on account of tuberculosis. This, however, was later shown to be an exaggeration, because under careful observation it appeared that less than fifty percent of these 86,000 are now officially recognized to have tuberculosis. Major Rist believes that less than twenty percent of these 86,000 are really

tuberculous. The old saying is: "Give a dog a bad name, and it is hard for it to lose it," so, a diagnosis of tuberculosis once made for a given patient is likely to be sustained. The self-distrustful physician may think the diagnosis to have been made by one of diagnostic ability superior to his own and be afraid to say that such a person does not have tuberculosis.

Bluemel, in Germany, has reported that, of cases supposed to require sanatorium treatment examined by him, less than 20 percent had active tuberculosis. Major Rist, of the French army, examined the men sent back from the front with a diagnosis of tuberculosis and found the disease present in less than 20 percent of the cases. ("Tuberculosis Among Soldiers," by E. Sergeant, in *Presse Médicale*, Jan. 3, 1918.) Sergent reported a year ago that 15 percent of the soldiers sent to him, to confirm the diagnosis of tuberculosis proved to be clinically free from it. This proportion has increased since then to 35 percent.

In another large group, there were men with signs of tuberculosis, but, no tubercle-bacilli could be found in the sputum; and he urges that those in this class should be reexamined at intervals. Some get free of all the symptoms, but, others finally show the bacilli in the sputum.

Examinations of candidates for tuberculosis at the second Plattsburg training camp, showed the following results (A. P. Francine, J. W. Rice, Francis B. Trudeau, *J. A. M. A.*, Dec. 22, 1917):

Number of candidates in reserve officers' training camp examined, 3,134. Accepted, 3,121—99.58 percent. Disqualified because of tuberculosis, 8, or 0.255 percent. Healed lesion reported and passed for active service, 3, or 0.095 percent. Recommended for special service, 2, or 0.064 percent. Found to be tuberculous, 13, or 0.414 percent.

Examinations of Regulars

Enlisted men examined, 584. Accepted, 578, or 98.97 percent. Disqualified because of tuberculosis, 5, or 0.85 percent. Special service, 1, or 0.17 percent. Found to have tuberculosis, 6, or 1.027 percent.

The number of cases of tuberculosis was twice as high (1.027 percent) among the regulars as among the candidates for officers' commissions (0.41 percent).

Increase of Tuberculosis Because of the War

Fishberg states that it has been shown that there are 100,000 tuberculous ex-soldiers in France at present. We must consider, however, that 6,000,000 or more soldiers have been engaged in this war fighting in France. He believes that he is safe in concluding that tuberculosis is not more likely to occur in soldiers during active warfare than in civil life. (Maurice Fishberg, M. D., in *J. A. M. A.*, June 16, 1917, "Tuberculosis and War.")

Figures published by Renon, in *Paris Médical* (1916), show clearly that tuberculosis has not increased among the civil population of France since the war began. Despite the large number of tuberculous soldiers in the European armies, cases of tuberculosis-infection acquired while serving during the present war have been nil. The reason is: most adults have been infected with tubercle-bacilli during childhood and have thus been immunized against exogenic reinfection with the same virus, so that they are just as safe in the army as in civil life. In the vast majority of cases of tuberculosis discovered among soldiers, it was ascertained that they had been affected with the disease before enlistment. Reactivation of old dormant lesions may occur in civil life, and does not occur any more often in military life. Records show that no previous war has increased the tuberculosis mortality and morbidity.

Reiche (*Ztschr. f. Tuberk.*, 1915, 24), in Hamburg, has shown that no increase in the tuberculosis mortality occurred during and after the Franco-Prussian war of 1870-71. The same was true in the United States after the Civil War. From observations of German soldiers during the present war, S. Schroeder (*Ztschr. f. Tuberk.*, 1915, 24), emphasizes that exposure to tubercle-bacilli plays no significant role in the causation of active tuberculosis in the German army. He has not seen a case of primary tuberculosis acquired in the campaign. The same has been recorded for the English and Russian armies. At any rate, it is certain that tuberculosis is no more liable to develop in soldiers than in the civil population.

August Predœhl (*Ztschr. f. Tuberk.*, 1915, 24), before the Medical Society of Hamburg, Germany, as the historian of tuberculosis, stated that he found that tuberculosis has not increased among the soldiers in active service. Among 5,000

medical and surgical patients treated in the military hospital under his care, only 18 showed symptoms and signs of active tuberculosis. In another hospital, Kassman encountered only 17 tuberculous patients among 3,000 soldiers.

In Russia, V. W. Sauvin (*Russk. Vrach*, 1917, 16. 26), having under his care 100,000 sick and wounded soldiers in the military hospital of Moscow, found that among 26,524 medical cases there were 955 cases of pulmonary tuberculosis. Pulmonary tuberculosis was thus found in 3 percent of the cases. How unlikely tuberculosis is to develop in soldiers on active duty, is clear when the rarity of surgical tuberculosis in wounded and injured soldiers is considered. It is extremely rare for tuberculous disease of the bones and joints to follow injuries among soldiers, whereas it frequently follows in the wake of injuries in civil life.

In conclusion, I wish to quote Osler ("The Tuberculous Soldier," *Lancet*, London, 1916, II, 220), who stated that, of 1,000,000 enlisted men between the ages of 18 and 40, the proportion to develop tuberculosis is probably much smaller than if these men had remained in civil life. The circumstances of the soldier's life, as a rule, do not weaken, but, strengthen the body's resistance. The Osler prediction was correct. Osler tersely states that "in a majority of cases the germ enlists with the soldier." (*Lancet*, 1916, II, 220). He believes, with other observers, that those of the soldiers who show signs of tuberculosis during their army life have had the disease prior to entering the campaign.

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[*Continued from July issue, page 520*]

Heart—Life—Mind—Soul—The Riddle of the Universe

Mind, that dual mind—our subjective and the objective consciousness, immortal essence and mortal intelligence—is all there is in heaven or on earth—life—death—and soul that cannot die! The lofty soaring mind, that fills and encompasses the universe and all eternity with the thoughtfulness of one infinitesimal second, tells the wondrous story over anew; the inscrutable reverberation of all time, that appals the understanding and imbues the solar plexus of the brain with a pious proneness. That astounding sweep of illimitable immensity which the deep scrutiny of the prying mind pervades would dethrone is rational equilibrium, were not the mind an indestructible essence of immortality, that may be grieved, but cannot be subdued nor annihilated.

Poetry, philosophy, religion spoken in hyperboles and grand language about the feelings, the sentiment, the emotions of the heart—ignoring, if not ignorant of it, the masterful fact that the heart is a powerful pumping-machine that is as insensible to the ecstasy of joy, the rapture of love, the sadness of disappointment or the agony of torture as the liver or the stomach might be. But, the electric sympathy of the mind flings off the debris of acute anatomical disturbances, through the medium of the heart, the chamber of the objective mind, vibrating the conflicting emotions focused in that sensitive haunt of mortality through the grand central nerve-system, reacting on the heart.

Yet, nothing of all this originates in the heart, but must emanate from the objective mind. The heart has no mind nor function other than the vitalizing one of sending the blood pulsating through the system, obedient to the thrilling throbs of the grand engine of life. When the mind is quiet and at rest, the heart is tranquilly at work. Pleasing objects enter the mind through the retina of sight, while oral tidings find a portal in the sense of hearing, and written or printed communications pass the eye, to find audience in the mind, whence any impression that may react on the heart must traverse the nerve connections with that great organ. Great and wondrous peril or some violent shock sometimes convulses the whole anatomical system, and the heart pulsates furiously, while the mind is almost dethroned. But it is the mind that realizes

or feels the danger and sends the alarm thrilling throughout the nervous mechanism, before which the heart was indifferently at work, realizing nothing eventful till the mind started the reaction with electric speed.

I know this to be true, because I have studied and proved it to a crucial finish in my own personality, fortified by the watchful experience of many years of a long life.

I am as incapable of slandering the heart as any poet or divine ever was, and concede that the moment the heart stops the objective mind is negative. My theme is "mind", and I do not want that the heart shall usurp any element that legitimately appurtains to the mind.

The mind is the irrefragible leverage upon which the world depends for emancipation from ignorance and slavery, vice, and disease, the curse of earth, the bane of man. Mind, in the weird shadow of midnight-lamps, ushered the wonders of this progressive age into the light of day, to bless suffering humanity.

The heart does not think and is incapable of any intelligent expression. We read and hear much about tenderness and hardness of heart, which translates to generosity or callousness of mind. If the mind is sympathetic and sensitively feels for human misery, that beautiful sentiment is attributed to tenderness and goodness of heart. When the mind is indifferent and morbid, the heart is said to be hard and bad. The scriptures overflow with beautiful songs about the heart; and that subtle organ has ever been the sweet-scented bouquet of poetry in all times, and languages and lands.

Our civilization, such as it is, our education, our refinement, our polish, our intelligence have been and are the fruitage of mind. Material betterments of the hard and oppressive fortunes of suffering humanity have sprung, as ingots of limpid gold leap from the purifying crucible, from the burning intensity of overwrought minds, striving in the silent night with the guarding custodians of the hoarded mysteries of Virgin Nature, reluctng to yield even the tiniest grain to accursed man, man unworthy, in his depravity, to enjoy the rich bequests wherewithal primitive time endowed his life of purity.

But those sleepless sons of science, strangers to the subterfuges of hypocrisy, scorning to imbue their majesty of mind in the degrading vices of circumjacent infamy, arose from scant and frugal suppers, to climb storied stairways to cold and cheerless garrets, where the exigency of cheapness rendered pinching poverty a sterling virtue, there to resume the unequal conflict with the relentless guardians of their yet nameless quests. And these seekers after truth ofttimes become oblivious to their own personality and their inconvenient and comfortless surroundings, until a glint of the morning sun, piercing the crisp and frosty air, faintly steals through a crevice in the broken windowpane, to shame the fading lamplight, arouses them from their absorbing reveries, and thus they have patiently outwatched the stars and vanquished the keepers of the storehouse of mysteries, by becoming their equals in purity of mind.

The Boon of Inventive Science

An authority as revered and admired as Thomas A. Edison, whose name, as the centuries pass down the corridors of eternity, will be enshrined in every household-sanctuary has avouched that he knows, nothing of zero weather or the flight of time when he is working on some abstruse problem.

Every little *tienda* (merchandise- store) here has its phonograph whose clear articulation of words in discourse and song is almost incredible to believe, without the incontrovertible evidence of one's senses. Spanish is the language used for these phonograph-records. I have seen the street crowded with poor women and children in front of such a store and they would weep when some sorrowful, pathetic song was reproduced by that wondrous mechanism, and then at once break out in hilarious laughter when some comical record was started.

The freaks of Edison and the crowning triumphs of Marconi—were there not a thousand and one other children of sublime thought—were ample to render mind the palm of transcendental glory, as the majestic conqueror of stubborn nature and the prospective emancipator of man from his woes and sufferings.

[To be continued]

What Others are Doing

TUBERCULOSIS SURVEYS

The *American Review of Tuberculosis*, for June, comments editorially on the present interest in the discovery of unsuspected or concealed tuberculosis by systematic examination of large numbers of people. A survey in 1915-16 by the Michigan Health authorities showed 44 percent of cases clinically tuberculous or potentially such among persons examined because of suspicious symptoms. At Framingham, Mass., the survey still in progress shows fifteen living cases to each death. The selective draft examinations show from 2 percent to 6 percent of cases. Of unique interest is the house to house canvass made at Saranac Lake, a tuberculosis resort. In a community of 5,000 persons only one-fifth of the population settled there for reasons of health and only 441 of these had actual tuberculosis. There were 860 transient residents during the six months' survey.

During 1917, about 1,200 tuberculous visitors reported to the Board of Health. Only sixteen living cases were of indigenous development, and only four of these were among the strictly native born. The writer suggests as an explanation for this very low rate the absence of crowding and industrial conditions, the large opportunity for outdoor invigoration and the generally higher standard of living. The introduction of a few large mills with their accompaniment of hard labor, dust and crowded tenements would, in all probability, soon bring about a higher incidence of tuberculosis.

THE USE OF DICHLORAMINE-T AND THE OPEN-TO-THE-AIR TREATMENT IN BURNS

The sterile scab, which, in his fight against sepsis, Sir Joseph Lister strove to attain as an ideal dressing for superficial wounds, would appear to be the perfect dressing for burns of the second and third degree; it would also in very large measure fulfil four of the six properties that, according to Stewart, are essentials of any perfect dressing; namely: that it be aseptic or mildly antiseptic; that it provide free drainage; that it will not macerate the tissues; that it will not stick to the tissues; and that it do not require frequent changing. To these requirements, in cases of severe and extensive burns, must be added yet another—that the dressing minimize the abnormal radiation of body-heat from surfaces devoid of the natural protection of skin and subcutaneous tissues.

In *The Therapeutic Gazette* for May, Doctors W. E. Lee and W. H. Furness report on their results in fifty cases of severe burns of the second and third degree treated during the past seven months at several Philadelphia hospitals, in all of which a modified open-to-the-air method was employed. These wounds healed with a surprisingly small degree of infection and a resultant promptness of epithelialization, producing softer scars and less contraction than under any other method.

In treating these cases, the authors secured the advantages of the open-air method as well as the paraffin-wax dressing, by applying over the burns, after cleansing with a 1- or 2-percent solution of dichloramine-T in chlorcosane, some mosquito-netting that had been impregnated in the paraffin-wax mixture known as parresine.

A MODIFIED OPEN-AIR METHOD OF TREATING BURNS

The method of treating burns, which the authors whose experiences were referred to in the preceding abstract employed, is as follows:

The entire burned area and a generous portion of the surrounding skin should be covered with a single layer of open-meshed mosquito-netting impregnated with paraffin wax. This paraffined netting may

be held in place with single layers of a circular turn of gauze bandage or by narrow strips of adhesive plaster applied over the edges of the netting and on the uninjured skin (never across a portion of the burned area!). This paraffined netting, being previously sterilized, furnishes an aseptic covering, while, at the same time, the large meshes provide free drainage for the wound secretions; in other words, it acts in an effective manner as an ideal sterile scab. When the wound secretions are abundant and become thick and dried on the outer side of the net so as to hinder free drainage, the whole dressing may be completely removed—often without causing any pain—by simply lifting the nonadherent paraffined net from the wound surface. Should the paraffined net become occluded so as to adhere to the surface of the burn, then a liberal spraying with sterile paraffin-oil (liquid petrolatum) from an ordinary atomizer always will loosen it.

The final requirement to be met, in order to attain the ideal dressing, is, an antiseptic that will control infection and, yet, not devitalize or even irritate the tissues. It was found that a 1-percent or a 2-percent solution of dichloramine-T in chlorinated melted paraffin wax—"chlorcosane"—according to the method of preparation proposed by Dakin and Dunham, can be used on the burned surfaces without causing the slightest deleterious effect on the tissues or discomfort to the patient, and with a pronounced control of the infection, as indicated by bacteriological counts made from smears of the exudates.

This oily solution can readily and evenly and painlessly be applied in the form of a spray, at ordinary room-temperature, to the entire burned surface before the paraffined net is in place, and at subsequent dressings every twenty-four hours, or through the meshes of the net if there is no necessity of removing it. For ward patients, no additional outer dressing is applied over the paraffined net and the burned parts are exposed to the air as much as possible.

When the burned area is extensive and there is danger of too great radiation of body-heat, the bed-clothing is raised above the injured part on a cradle on which two or three ordinary electric-light bulbs are suspended and kept constantly lighted over the wound. Whether it is the equable temperature thus maintained or a direct action of the actinic rays, is difficult to say, but, this electric-light bath seems to have, unquestionably, a beneficial effect upon the healing-processes.

If the paraffined netting, which of necessity is somewhat stiff, does not conform readily to the contours of the affected area, it may be cut in short or narrow strips, as the case may be, and the wound thus paved over with it.

INFECTIOUS ENDOCARDITIS

At a meeting of a French medical society (reported in *Paris Médical* for June 8), the heart of a soldier was demonstrated, who had died thirty days after the onset of an infectious endocarditis simulating typhoid fever, but, which had, at first, presented transitory symptoms of meningeal disturbance.

A marked diastolic murmur had made it possible to diagnose its localization at the aortic orifice, the right valve of which, perforated at the base, was transformed into a vegetative mass as large as an almond. There was splenic infection and hepatization of the lower lobe of the right lung; and, toward the end of the malady, serofibrinous pericarditis had set in, as well as hemorrhagic pancreatitis. Smears and sections of the endocardial vegetations disclosed the presence of cocci. Cultures made of blood removed previous to autopsy, in spleen tissue and in blood serum, showed pure cultures of streptococci.

BLEEDING FROM THE LYMPHATICS IN CASES OF CANCER

In a communication to the Academy of Sciences (*Paris Médical,* June 15), Doctor Yves Delage referred to the fact that cancer reoccurs despite every method of treatment that has hitherto been proposed; including, surgical, chemical, radium and x-ray exposure, and so on. He concludes that it is necessary to counteract the cancerous intoxication of the organism and believes that a continued 'bleeding" from the lymphatics might lead to a detoxication of the cancerous organism, provided that a suitable technic could be developed.

If a very fine cannula is introduced into large lymphatic vessels, such as those of the thigh or, perhaps, in the large lym-

phatic vein, or into the thoracic canal; or then into the peripheral sinuses of the large ganglia; and if then to this cannula is attached a small-caliber rubber tube and thus a continuous bleeding from the lymph-vessels could be established, the quantity of lymph in this manner abstracted from the body might be restored to the organism by an equal quantity of salt-solution, to be introduced hypodermically.

Unfortunately, Doctor Delage adds, there is a serious uncertainty in this procedure, owing to the difficulty of the operation. Surgeons whom he has consulted have not found it easy, because the lymph-vessels are very small; also, their walls are thin and friable and, moreover, one could not be certain to avoid obstruction, which would necessitate changing the place where the cannula is inserted. However, like many other ideas that seem impossible before having been tried, it may be that this also will pass into practical utilization.

The idea presents nothing that can be rejected as absurd. We have often insisted that cancer, even if localized, is not a circumscribed disease, but, that there is an underlying cancerous condition of the whole organism, a carcinosis, which may or may not give rise to definitely circumscribed and localized cancerous growth.

If, therefore, it is correct that the cancerous products, cancerous cells or whatever they may be, pass through the lymphatics, the idea of draining the lymph-vessels and thereby stimulating a more normal reproduction of lymph, presents nothing impossible, indeed, it has much to commend it. Whether such method is feasible, is another question.

IS PHENOLPHTHALEIN TOXIC?

In a recent number of *Paris Médical*, reference is made to the frequent use of phenolphthalein as a laxative, a remedy that is the principal constituent of several important drug combinations. Since this drug does not exert a laxative action in animals, it has been impossible to determine experimentally its toxic dose. However, a recent observation of Doctor Orland's affords information on this subject.

A sick child, three years old, had swallowed, by mistake, 18 tablets of phenolphthalein containing 10 centigrams each, that is, a total of 1.8 Gram, (about 27 grains)—a dose that is reasonably large, even for an adult.

The boy, who had been seen soon after, did not present any signs of poisoning. He had several copious dejections, the latter at first being green, but, very rapidly resuming a normal appearance. The only abnormal symptom present was oliguria, which lasted about two days, the quantity of urine eliminated amounting hardly to 100 Grams in twenty-four hours. The elimination of the phenolphthalein through the urine continued for about five days.

It seems, therefore, that the limit of tolerance of phenolphthalein is quite high and that this drug may be utilized for its laxative action without fear.

TAKING STOCK OF SARANAC

F. B. Ames, of Boston, reports on a tuberculosis survey of Saranac Lake, New York, in the June number of the *American Review of Tuberculosis*. The village owes its growth and present standing to its reputation as a health resort for tuberculous patients. A careful house to house canvass was made and all data and tabulations were based on personal interviews. No clinical or laboratory examinations were made to verify the data. The people cooperated frankly and well. The indigenous mortality and morbidity, including the incidence among children, are compared with the results of other similar studies. The report ends with the following conclusions:

About one-fifth of the total population of the district is made up of individuals who went to live there for their health. The number who went for any disease except tuberculosis is negligible. Pulmonary tuberculosis is the most common form of the disease manifested.

Six percent of the tuberculous persons listed in the survey had not been under the care of a local physician since their residence in the district.

Indigenous morbidity and mortality were low, but 0.3 of 1 percent of living cases being found among the native-born and 0.9 of 1 percent among previously healthy residents. This result is in accord with investigations elsewhere, and the conclusion seems justified that there is a minimum danger of infection of healthy adult residents of resorts frequented by tuberculous patients. The more general appli-

cation of this statement is worthy of careful consideration.

A total of 61 percent of negative family histories was obtained. This would indicate that sources of infection are widespread and that absence of direct family history by no means presupposes freedom from adult manifestation of clinical disease.

In families with both parents tuberculous there is more clinical tuberculosis in the children than if only one parent is tuberculous. Incident morbidity is very low among children in the health district.

Educational influences emanating from nearby sanatoria, and locally the "open door" for the tuberculous into unrestricted industrial and social activities, have done much to remove fear and ignorance and to create an intelligent public attitude toward the disease. With this sane attitude existent the problems connected with the control of tuberculosis are becoming less and less difficult of solution.

HEALTH CONDITIONS AMONG IMMIGRANTS

W. L. Rathbun, of Otisville, New York, discusses the tuberculosis problem among our immigrants in the June number of the *American Review of Tuberculosis*. The vital statistics show that the death rate from pulmonary tuberculosis is higher among the foreign-born than among the native-born population. Many immigrants with quiescent or active lesions on arrival exacerbate or progress after landing. The general law must also apply here, that the mortality and morbidity of tuberculosis of a given class is in inverse ratio to its average income. Other factors being equal, the maximum of overcrowding and poorest quality of food are almost sure to be associated with the greatest poverty. Exacerbations are not, under such conditions, the result of superinfection but come from an extension or lighting up of old lesions in the great majority of cases. If these conclusions are correct it would seem very unwise to admit immigrants with definite tuberculosis of the lungs even though quiescent or arrested. Funds for the treatment of tuberculous aliens can be expended to much better advantage in the countries from which they come. The rejection of tuberculous immigrants is to the advantage of colonies of earlier arrivals of their respective kinds, to which the newcomers are apt to gravitate, of advantage to contractors employing unskilled labor extensively in as much as inefficients and dependents will be eliminated, and should enlist the cooperation of charitable agencies interested in the immigrant's own welfare. At present, the physical conditions and the small number of medical examiners make anything like a thorough examination of all immigrants impossible. Only those singled out by rapid inspection as suspicious are given a physical examination;—a system that is obviously unfair to all the rest who have also paid their poll tax of $4.00 intended to provide this very benefit. Since the poll tax has been collected a surplus of $9,000,000 in excess of expenditures has accumulated. In 1915, when immigration had decreased very considerably, the percentage of certificates for deaths was 9.24, as contrasted with a percentage of 2.35 in 1914, before the reduction in volume of immigration which made possible the more intensive examination in 1915. At present there is not available sufficient hospital space for strict examinations of all immigrants during heavy receivings. The more rapid method of x-ray examinations would be of assistance in excluding non-tuberculous conditions and in confirming the diagnosis of pulmonary tuberculosis. The nucleus for their work already existing at Ellis Island could be profitably enlarged. The expense of thorough examination would be much less than the subsequent sanatorium care of the tuberculous and the incidental expenditures involved in the question of relapse, the care of families of patients and the burial expense. To prevent mistakes and protect the interest of immigrants, experts in physical examination of tuberculosis should be stationed at large ports of entry and with them should rest the final decision in all suspicious cases. Steamship companies should be fined $100 for bringing in a tuberculous alien, and be responsible as well for the expenses incident to any necessary detention period and for the alien's deportation if rejected. Cooperation with Canadian authorities is essential, otherwise proper border examination should be arranged for. The needs may be summarized as follows:

1. Reorganized and increased medical staffs with equipment at the various im-

migration stations for a satisfactory minimum physical examination of each immigrant.

2. The medical organizations to include a sufficient number of tuberculosis specialists and trained roentgenologists to carry forward proper examinations for tuberculosis.

3. An educational campaign to inform immigrant associations, steamship companies, and other institutions, of advantage to be derived from the excluding of tuberculous aliens.

TRACHOMA IN KENTUCKY

The estimate published three years ago by the Kentucky State Board of Health, that out of a total population of about 2,400,000 there were 50,000 cases of trachoma, is believed in the office of the U. S. Public Health Service at Washington to be, by no means, an excessive estimate. In a letter of January 23, 1918, Surgeon McMullen, who for several years has been in charge of the federal antitrachoma work in Kentucky, writes, in *The News Letter* for June: "I am of the opinion that the number of cures effected in eastern Kentucky is greater than the new infections. A survey of 24 counties, mostly in the eastern part of the state, made about three years ago, showed that out of 18,000 persons examined 1280 were suffering from trachoma, or about seven percent. During the past three years, between six and seven thousand individual cases of trachoma have been treated, and a large percentage of these have been recorded as cured. Of course, a great many cured cases (patients) of trachoma who live long distances from the hospital never return for inspection, and their history-cards are, therefore, not complete as to the result obtained. It is believed that the three hospitals in the eastern part of the state are effecting a reduction in the number of trachoma-cases in that section. However, it is safe to assume that in the western and other portions of the state where this opportunity for treatment is not present the disease is on the increase.

"The three small hospitals are covering as much ground as possible, but, are inadequate for the entire state, and other hospitals should be established, to cope with this contagious disease that is so destructive in its effects."

THE CAMPAIGN AGAINST TRACHOMA

According to *The News Letter* for June, of the 280 eye-patients admitted to the Illinois Charitable Eye and Ear Infirmary in 1917, 101 cases of trachoma were treated. The State Department of Public Health and the Department of Public Welfare will cooperate in an effort to stamp out this disease, which prevails in southern Illinois and which has caused a number of soldiers to be returned from the ranks. According to the statistics of the secretary of the Illinois Welfare Commission, trachoma is the leading cause of the high rate of blindness in southern Illinois, and blindness is most prevalent in counties where there are no public nursing systems.

Surgeon John McMullen, U. S. Public Health Service, visits Camp Zachary Taylor, near Louisville, from time to time and examines soldiers for trachoma. Those found to have trachoma are then removed to the U. S. Marine Hospital in Louisville, are operated upon by Surgeon McMullen and are retained in the hospital until they are in condition to return to Camp Taylor. Recently twelve soldiers were operated upon for this affection.

Besides trachomatous soldiers from Camp Taylor, more than twenty trachomatous children of civilians living in the extra-cantonment zone outside the city limits of Louisville were operated upon in the Marine Hospital in Louisville on April 23. Several physicians from the army and from the U. S. Public Health Service were present at this clinic, conducted by Surgeon McMullen with the cooperation of the health-officer of the county.

PREVENTION OF BLINDNESS

In the illustrated lectures on child-welfare, used in the Illinois baby-saving campaign (*News Letter,* June), the Illinois Society for the Prevention of Blindness provides 11 slides on the prevention of blindness and calls special attention to laws regarding ophthalmia neonatorum and the use of "drops" in the eyes of the newborn.

Whenever and wherever possible, in suburbs and small towns near the city of Chi-

cago and in other sections of the state, the Society gives assistance. During the summer, the Society's work will be carried on throughout the state with the Child-Welfare Department of the State Council of National Defense. It is hoped that by the end of the year, every county will have had its special campaign and literature brought before every community in its respective languages.

THE EXCESSIVE VENEREAL RATE IN OUR ARMY

Before the Chicago Institute of Medicine, last April, Dr. William T. Belfield read a paper (*N. Y. Med. Jour.*, June 15), in which he declared that from 1906 to 1911 the average venereal incidence of the United States regular troops at home was about 150 men per 1,000 per year; while, since the official adoption of the prophylactic treatment in 1912, the venereal rate of our home army has averaged about 90. Even this places the United States regular army at the head of all armies, as regards the frequency of venereal infection; for, prior to the present war, the rate in various foreign armies ranged about as follows: Italian, 77; British, 64; Russian, 63; Austrian, 54; French, 24; Japanese, 24; Prussian, 19; Bavarian, 17.

In discussing the problem, which is: how to decrease this excessive frequency (which, under war conditions, even has increased in all armies), Doctor Belfield offered various suggestions for measures that are in part educational, in part punitive, and, further, prophylactic.

As to the educational measures, it is, of course, necessary to instruct the soldier carefully concerning the disasters, immediate and remote, wrought by venereal disease. Doctor Belfield points out, however, the absolute necessity that in all matters concerning the health of troops the medical officer should have supreme control. Only if he is endowed with sufficient authority can he insist upon measures and precautions calculated to diminish the venereal rate among the men, and to enforce prophylactic treatment whenever exposure shall have taken place.

Incidentally, the author raised another potent reason in support of the bills now before congress, known as the Owen and the Dyer bills, which provide for increased rank for medical officers, not only of the regular army, but, also of the Medical-Reserve Corps.

It being definitely established that continence is entirely harmless and, in fact, beneficial to the health of the young male of the human species, the disability for military duty, owing to venereal infection should be made a cause for punishment. This can be done in various ways, and especially by educational measures, through which venereal diseases resulting from the soldier's voluntary act no longer can be explained away by the childish plea that he "didn't know it was loaded."

As to the prophylactic treatment, it has been determined by rather extended experience that this has been completely successful if properly employed within an hour after exposure, although it often has failed when used four or more hours thereafter. It is suggested that soldiers be instructed in the immediate employment of prophylactic treatment and that neglect to utilize it shall be cause for punishment.

In the efforts to reduce the excessive frequency of venereal disease among our soldiers, the government's firm and intelligent handling of the liquor-question will be an important factor, since it is well known, and generally conceded, that venereal infection is more often acquired by men under the influence of alcoholics than at other times. It is to be hoped that the government will make use of this present opportunity to handle the venereal problem with equal firmness and intelligence, the benefits whereof would accrue, not only to the the soldiers themselves, but, to the nation at large.

Miscellaneous Articles

Studies on Food Economies

XV.—About Starch

THE starch, which we take so abundantly as food, appears to have no more food-value to us than to the vegetable germ until the conversion into dextrin or sugar is effected.

From what I already have stated concerning the action of heat upon starch, it is evident that this conversion is more or less effected in some processes of cookery.

In the baking of bread, an incipient conversion probably occurs throughout the loaf, while in the crust it is carried so far as completely to change most of the starch into dextrin and some into sugar and caramel.

Those of us who can remember our bread-and-milk may not have forgotten the gummy character of the crust when soaked. This may be felt by simply moistening a piece of crust in hot water and rubbing it between the fingers. A certain degree of sweetness may also be detected, though disguised by the bitterness of the caramel, which also is there.

The final conversion of starch food into dextrin and sugar is effected in the course of digestion, especially, as already stated, in the first stage—that of insalivation.

Saliva contains a kind of diastase, which has received the name of salivary diastase and mucin. It does not appear to be exactly the same substance as vegetable diastase, though its action is similar. It is more abundantly secreted by herbivorous animals, especially by ruminating animals. It is comparatively deficient in carnivorous animals, shown by the fact that, if vegetable matter is mixed with their food, starch passes through their intestines unaltered.

Some time is required for the conversion of the starch by this animal diastase, and in some animals there is a special laboratory, or kitchen, for effecting this preliminary cookery of vegetable food.

Ruminating animals have a special stomach-cavity for this purpose, in which the food, after mastication, is held for some time and kept warm before passing into the cavity that secretes the gastric juice. The crop of the grain-eating birds appears to perform a similar function. It is there mixed with a secretion corresponding to saliva, and is thus partially malted—in this case, before mastication in the gizzard.

At a later stage of digestion, the starch that has escaped conversion by the saliva is again subjected to the action of animal diastase contained in the pancreatic juice, which is very similar to saliva.

It is a fair inference from these facts that we, creatures who are not provided with a crop or compound stomach and manifestly secrete less saliva than horses or other grain-munching animals, require some preliminary assistance when we adopt graminivorous habits; and one part of the business of cookery is, to supply such preliminary treatment to the oats, barley, wheat, maize, peas, beans and others that we cultivate and use for food.

It may be added that the stomach itself appears to do very little, possibly nothing, toward the digestion of starch. The primary conversion into dextrin is effected by the saliva, and the subsequent digestion of this takes place in the duodenum and following portions of the intestinal canal.

This applies equally to the less easily digested material of the vegetable tissue described in the preceding chapter. Hence, the greater length of the intestinal canal in herbivorous animals as compared with the carnivora.

Having described the changes effected by heat upon starch, and referred to its

further conversion into dextrin and sugar, we will now take some practical examples of the cookery of starch foods, beginning with those that are composed of pure or nearly pure starch; namely, arrowroot, tapioca, sago and potatoes.

When arrowroot is merely stirred in cold water, it sinks to the bottom undissolved and unaltered. When cooked in the usual manner so as to form the well-known mucilaginous or jelly-like food, the change is a simple case of the swelling and breaking up of the granules already described as occurring in water at the temperature of 140 degrees F. There appears to be no reason for limiting the temperature, as the same action takes place from 140 degrees and upward to the boiling-point of water.

I may here mention a peculiarity of another form of nearly pure starch food, namely, tapioca, which is obtained by pulping and washing out the starch granules of the root of the manihot, then heating the washed starch in pans and stirring it, while hot, until ready. This cooks and breaks up the granules and agglutinates the starch into nodules which, as explained by James Collins, are thereby coated with dextrin. It is to this gummy coating to which some of the peculiarities of tapioca pudding are attributable and which gives it its characteristic cohesion.

Incidentally, it is a curious fact that this manihot root, from which our harmless tapioca is obtained, is terribly poisonous. The plant is one of the large family of nauseous spudgeworts (euphorbiaceæ). The poison, hyoscyamine, resides in the milky juice surrounding the starch granules, but, being both soluble in water and volatile, most of it is washed away in separating the starch granules, while any that remains after washing is driven off by the heating and stirring, which has to reach 240 degrees F. in order to effect the changes described. It is reasonable to suspect that the difference between the forms of tapioca and arrowroot has arisen from the necessity of thus driving off the last traces of the poison, with which the aboriginal producers are so well acquainted as to combine the industry of poisoning their arrows with that of extracting the starch food from the same root. No certificate from the public analyst is demanded to establish the absence of the poison from any given sample of tapioca, as the juice of the manihot root, like that of other spurges, is unmistakably acrid and nauseous.

Sago, which is a starch obtained from the pith of the stem of the sago-palm and other plants, is prepared in grains in the manner of tapioca, with similar results. Both sago and tapioca contain a little gluten and, therefore, have slightly more food-value than has arrowroot.

The most familiar of our starch foods is the potato; and it well may be placed first among the starch foods; for, starch is its prevailing constituent, as the average composition shows: water, 75 percent; starch, 18.8; nitrogenous material, 2; sugar, 3; fat, 0.2; mineral salts, 1. The salts vary considerably, though, with the kind and the age of the potato, from 0.8 to 1.3 percent in fullgrown tubers, while young potatoes contain more.

In boiling potatoes, the change effected appears to be simply a breaking up or bursting of the starch granules and a conversion of the nitrogenous gluten into a more soluble form, probably by a certain degree of hydration.

As we all know, there is a great difference among potatoes; some are waxy, others are floury; and these, again, vary according to the manner and degree of cooking. I can not find any published account of the chemistry of these differences, and must, therefore, endeavor to explain them in my own way.

As an experiment, take two potatoes of the floury kind; boil or steam them together until they are just softened throughout; or, as we say, "well done." Now leave one of them in the saucepan or steamer and very much overcook it. Its floury character will have disappeared and it will have become soft and gummy. The reader can explain this by simply remembering what has already been explained concerning the formation of dextrin. It is because of the conversion of some of the starch into dextrin.

My explanation of the difference between the waxy and the floury potato is, that the latter is so constituted that all the starch granules may be disintegrated by heat in the manner already described before any considerable proportion of the starch is converted into dextrin, while the starch of the waxy potato, for some reason, probably a larger supply of diastase, is so much more readily convertible into dextrin that a considerable proportion becomes gummy

before the whole of the granules are broken up, that is, before the potato is cooked or softened throughout. Potatoes much sprouted have developed more diastase, hence, are more waxy.

I must here throw myself into the great controversy of "jackets or no jackets." Should potatoes be peeled before cooking or should they be boiled in their jackets?

I say, most decidedly, in jackets, and will state my reasons. From 55 to 56 percent of the above-stated saline constituents of the potato is potash and potash is an important constituent of blood—so important that in Norway, where scurvy once prevailed very seriously, this has been banished since the introduction of the potato; and, according to Lang and other good authorities, this is owing to the use of potatoes by a people who formerly were insufficiently supplied with saline vegetable food.

Potassium salts are freely soluble in water, and I find that the water in which potatoes have been boiled contains potasium; as may be proved by boiling it down to concentrate, filtering, and then adding the usual potassium-test—platinum chloride.

It is evident that the skin of the potato must resist this passage of the potassium salts into the water, though it may not fully prevent it.

I have already said that the practice of using the digestive apparatus of sheep, oxen, and other herbivores for the preparation of our food is merely a transitory barbarism, to be ultimately superseded by scientific cookery by preparing vegetables in such a manner that they will be as easily digested as the "prepared grass" that we call beef and mutton.

I do not mean by this that the vegetable we should use must be grass itself or that grass should be one of the vegetables. We must, for our requirements, select vegetables that contain as much nutriment in a given bulk as does our present mixed diet; however, in doing so, we encounter the serious difficulty of finding that the readily soluble cell-wall or main bulk of animal food, the gelatin, is replaced in the vegetable by the cellulose, or woody fiber, which not only is more difficult of solution, but, is not nitrogenous, being merely a compound of carbon, oxygen and hydrogen.

Next to the enveloping tissue, the most abundant constituent of the vegetables we use as food is starch. Laundry associations may render the Latin name "fecula" or "farina" more agreeable to us when applied to food.

We feed very largely on starch, and take it in a multitiude of forms. Excluding water, it constitutes above three-fourths of our "staff of life"; a still greater proportion of rice, which is the "staff" of Oriental life; and constitutes nearly the whole of arrowroot, sago and tapioca, which may be described as composed of starch and water. Peas, beans, and every kind of seed and grain contain starch in preponderating proportions; potatoes, the same; and even those vegetables that we eat raw all contain within their cells considerable quantities.

Take a small lump of dough, made by moistening wheat-flour, fold it in a piece of muslin and, with the fingers, squeeze this bag under water. The water becomes milky, and this milkiness will be seen to be produced by minute granules that sink to the bottom when the agitation of the water ceases. These are starch granules. They may be obtained by similar treatment of other kinds of flour.

Viewed under a microscope, these starch granules are seen to be ovoid particles with peculiar eccentric markings, which I must not tarry to describe. The form and size of these granules vary according to the plant from which they are derived; however, the chemical composition of every variety of starch is the same, excepting, perhaps, that the amount of water associated with the particular starch varies, produces some small differences of destiny or other physical variations.

The ultimate chemical composition of starch is the same as that of carbon, as present in cellulose and the elements of water, and in the same proportions; still, the differences between their chemical and physical properties indicate some difference in the relative arrangement of these elements. As it would be quite out of place here to discuss the theories of molecular constitutions, which such differences have suggested, especially so because they are all rather cloudy, we must pass that by. Broadly, the actual percentage of these elements is: carbon, 44.4; oxygen, 49.4; hydrogen, 6.2.

The difference between starch and cellulose that most closely affects the present subject, that of digestibility, is considerable.

The ordinary forms of starch, such as arrowroot, tapioca, rice, are among the

most easily digestible kinds of food, while cellulose is peculiarly difficult of digestion; in its crude and compact forms, it is quite indigestible by the human digestive apparatus.

Neither of them are capable of sustaining life alone; they containing none of the nitrogenous material required for building up muscle, nerve, and other animal tissue. They may be converted into fat and they may supply fuel for maintaining animal-heat and may, possibly, supply some of the energies demanded for organic work.

Serious consequences have resulted from ignorance of this fact. The popular notion that anything which thickens to a jelly when cooked must be proportionately nutritious is decidedly fallacious, and many a victim has died of starvation by the reliance of nurses upon this theory and, consequently their feeding an emaciated invalid on mere starch, in the form of arrowroot, and so on. And the selling of fancy varieties of starch at ten times its value greatly aided this delusion, so many believing that whatever is dear must be good.

The change which takes place in the cookery of starch may, I think, be described as simple hydration or union with water, not, that definite chemical combination which may be expressed in terms of chemical equivalents, but, a sort of hydration, of which we have so many other examples, where something unites with water in any quantity, the union being accompanied with an evolution of some amount of heat.

Striking illustrations of this are presented on placing a piece of hydrated soda or potassa in water or mixing sulphuric acid, already combined chemically with an equivalent of water, with more water. Here, we have aqueous adhesion and considerable quantitative chemical combination demanded by atomic theories.

When water containing starch is heated to a little above 140 degrees F., absorption of water takes place through the enveloping membrance of the granule, the grains swell up and the mixture becomes pasty or viscous. If this paste be largely diluted with water, the swollen granules still remain as separate bodies and slowly sink, though considerable exosmosis of the true starch has occurred, as shown by the thickening of the water.

I suppose that, in their original state, the enveloping membrance of the granule is much folded and that these folds form the curious marking of concentric rings that constitutes the characteristic microscopic structure of starch granules; and that, when cooked at the temperature named, the very delicate membrane becomes fully distended by the increased bulk of the hydrated and diluted starch, and thus the rings disappear. A very little mechanical violence, mere stirring, now breaks up these distended granules, and we obtain the starch paste so well known to the laundress and to all who have seen cooked arrowroot.

If now this paste be dried by evaporation, it does not regain its former insolubility, but, instead, readily dissolves in hot or cold water. This is what may be described as cooked starch.

If now the heat is raised, from 140 degrees to the boiling-point and the boiling continued, the gelatinous mass becomes thicker and thicker; and, if there are more than 50 parts of water to 1 of starch, a separation takes place, the starch settling down with its 50 parts of water, leaving the excess of water standing above it.

Carefully dried starch may be heated to above 300 degrees F. without becoming soluble; however, at 400 degrees, a remarkable change takes place.

A. T. CUZNER.

Gilmore, Fla.

REGARDING THE LUMINAL-TREATMENT OF MORPHINE-ADDICTION

I do not know what member of your editorial staff penned the sentiment found at the bottom of page 328 of the May number of CLINICAL MEDICINE, namely "Let somebody start some fool notion, such as Bergon's gas-treatment of tuberculosis, and we doctors go crazy over it," but, I can take off my hat to him and congratulate him on his ability and courage in telling the truth as he sees it; and, I want to add, what is equally true, that, if you let somebody start the notion that a certain (made-in-Germany) product, such as luminal, will cure morphine-addiction, a lot of doctors go crazy over it and even as sane, level-headed a bunch of editors as those who sit in the "holy of holies" of CLINICAL MEDICINE will publish a paper about it (see May, p. 358), and thousands of physicians will believe it because it appeared in their

beloved AMERICAN JOURNAL OF CLINICAL MEDICINE.

That's what gets my angora. The article about luminal tells us nothing that we do not already know, for, we know that luminal is very much like veronal, both being synthetics, with barbituric acid as the base; veronal being a diethyl-barbituric acid and luminal being a phenyl-ethyl-barbituric acid, and neither one having a curative effect on any recognized disease-condition.

Doctor Goetz declares emphatically that morphine-addiction is a disease. I say just as emphatically that morphine-addiction is not a disease. I have before me at this time no less than six copies of CLINICAL MEDICINE containing articles on morphine-addiction, namely those for July, 1916, by Tuchler; August, 1917, by Stokes; January, 1918, by Wallace; March, 1918, by J. L. B.; April, 1918, by Pearson; and in the current number (May), by Goetz; and not one of them writes from the correct viewpoint, because they all look upon morphine-addiction as a disease.

You might, with equal consistency, say that smoking cigars is a disease. Morphine-addiction is not a disease; it is a condition, a disorder resulting from chronic narcotic poisoning, plus an established toleration for the drug, and complicated by an ever present, dominating fear that is a powerful factor in every case of morphine-addiction. Stokes, and Pearson, both recognize that fact, and speak intelligently of it. Doctors Stokes, Pearson, and Wallace also recognize the fact that each addict is an individual problem, and that we are dealing, not alone with morphine-addiction, but, with a personality, that, while all addicts present a certain number of symptoms that are common to all of them, each patient stands in a class by himself and must be treated accordingly.

In the past twenty years, I have personally cured nearly three thousand drug-addicted people (2,968, to be exact), and I have never yet seen two people thus addicted who could be treated in just the same way, by exactly the same doses of the same drug, at the same intervals; yet. Doctor Goetz positively asserts that, with luminal, he cures every addict, and, he treats morphine-addiction, instead of treating the patient for narcotic poisoning.

Upon analyzing my 2,968 cases of morphine-addiction, one will, inevitably, be forced to the same conclusions that I have reached; and here are some of these conclusions.

First, morphine-addiction is chronic narcotic poisoning, plus habit, toleration, and fear in an individual who belongs to one of two classes.

Second, that the narcotic always covers up some organic disease, something that in many instances was the underlying cause of the first dose of the drug.

Third, that, spite all that has been written and said about morphine-addiction being a disease, and not a vice, all drug-users may be divided into just two classes.

In class one, we can include all of the physical, mental, and moral defectives, the tramps, hoboes, idlers, loafers, irresponsibles, criminals, and denizens of the underworld, and, among women, the idle rich, who began taking the drug for the intoxication it produces and have kept it up until they have become slaves to its devilish power. And, all these *do not want to be cured.* If forced to take treatment, they may be cured, but, they almost always relapse. In these cases, morphine-addiction is a vice, as well as a disorder resulting from narcotic poisoning. These are the "drug-fiends."

In class two, we have many types of good citizens, who have become addicted to the use of the drug innocently and who are, in every sense of the word "victims." Morphine is no respecter of persons, and the victims are doctors, lawyers, ministers, artists, actors, judges, congressmen, senators, priests, authors, women, girls, all of whom realize their conditions and *want to be cured.* In these cases, morphine-addiction is not a vice, but, an incubus, and, when they are cured, they stay cured.

Age and temperament, environment and moral support have something to do with all of these cases, and the complications that we invariably uncover the moment the drug is withdrawn, make each case a psychological study, as well as a case of morphine-addiction.

Each patient must be denarcotized, the toleration must be removed, the habit broken up, and the fear replaced by confidence and hope. No single drug known to the medical profession can accomplish all of these things.

In order to denarcotize a patient, you must have a drug that is antagonistic to

opium and all of its derivatives; something that will rouse up the narcotized nerves and nerve-centers and produce an effect that is the exact opposite of that of the drug for which a toleration has been established. Cathartics are a necessity. Diuretics, diaphoretics, and stimulants are valuable and must be at hand. Denarcotization and elimination are the keynotes for the treatment.

In order to get the best results, a drug-addict should be treated in a nice, clean, well-kept sanitarium that is operated for the care of all kinds of chronic cases, and never under the same roof with a lot of drunkards and dopers. Between the drunkard and the doper, there is a strong feeling of caste, and the drunkard, no matter how low he may have fallen, always feels that he is far superior to the unfortunate doper.

Among dopers, no matter what their station in life may be, there is a feeling of "camaraderie," and they like to get together and swap experiences, and each one delights in telling how he "suffered the torments of the damned" at some other institution and how near he came to death's door, and, the first thing you know, the whole bunch of them will be "suffering the torments of hell" right then and there.

Among drug-addicts, there is danger in propinquity. Familiarity breeds fear, and one grunting, grumbling patient among fifty that are practically cured will have the entire bunch in a panic of fear in less than half an hour.

The ideal surroundings for a drug-patient is, a room with bath, in a reputable sanitarium. It should be well ventilated, well lighted, and be kept at a proper temperature. Have a nurse that will follow your directions to the letter and work for your interests as well as that of the patient. Provide a supply of bilein and podophyllin tablets, magnesium sulphate, seidlitz powders, saline laxative, and Hinkle's laxative pills. Keep on hand duboisine, eserine, strychnine, sparteine, strophanthin, glonoin, lobeline, emetine hydrochloride, pilocarpine, chloretone, sulphonmethane, and, last and least, veronal.

Armed with this supply of ammunition you are prepared for the conquest and cure of your patient. Meet the complications as they arise. When you have uncovered some old chronic condition, treat it as a complication; and, the better you are at treating chronic ailments, the better results you will have in treating the addiction.

Hot baths are a valuable adjunct to the medicinal treatment, but, I never, in all of my experience with this class of cases, have seen any really valuable results from the use of electricity.

Many people have asked me what I mean by toleration. The habitual use of increasingly large doses of morphine or other derivative of opium can only be accomplished by establishing a systemic toleration for a dangerous narcotic. That toleration is established by the formation and gradual development of an antitoxin in the blood of the addicted person, and I can prove that statement by taking a man that is using 60 grains of morphine every twenty-four hours, hypodermically, and in twenty-four hours I will put him in such condition, by eliminating both the toxin (morphine) and the antitoxin, and do it so thoroughly that I can make him perfectly comfortable with 1-2 grain doses of morphine every six hours.

Antidote the poison (morphine) in the system, eliminate it, break up the toleration by eliminating the antitoxin, break up the habit, restore the disordered functions, and treat all complications rationally and skillfully, and you will not only cure every case you undertake, but, will make a lifelong friend out of every one you rescue from the hell of fear and slavery.

GEORGE D. SWAINE.

Cleveland, Ohio.

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[Doctor Swaine's strictures are not well taken in so far as he takes the editors to task for printing the article to which he objects. Bless you, doctor, we don't have to agree with everything that we print over somebody else's signature. The author himself is responsible for the views he represents, while the editors have to stand for only that which is printed editorially. So far as the luminal article is concerned, there is no doubt in our minds but that many cases have been treated successfully by means of this drug. We ourselves have personal knowledge of several. That does not mean, nor does Doctor Goetz claim, that the administration of this drug alone will cure every case of morphine-addiction.

Doctor Swaine is quite right in insisting that it is not the morphine-addict that

must be treated, but, the patient that is a morphine-addict. Moreover, it is just as necessary to restore the physiological balance in this patient in every respect as it is to eradicate his desire for morphine. In short, the treatment must be complete if it is to be successful and it must restore the patient as nearly to a normal condition as is possible.

Whether morphine-addiction is a disease or "a condition and a disorder resulting from chronic narcotic poisoning, plus an established toleration for the drug, and complicated by an ever present dominating fear," seems to us of little moment, simply because we can not see any marked distinction. Disease is a state of the body in which the normal functioning of one or several organs is disturbed. There are many definitions of disease, but, this may stand.

Whether or not morphine-addiction is a disease or a disorder, really does not matter. However, there is one point particularly that Doctor Swaine makes that seems to us of primary importance, and that is, the ever present dominating fear that is a powerful factor in every case of morphine-addiction. It is this fear that deprives the patient of his confidence of being permanently cured. It holds before his eyes the probability of relapse. It makes him timid in contact with other people and prevents him from doing his best. This fear requires special and personal treatment, and, if it is overcome, a great step toward cure will have been taken.

Doctor Swaine's classifications into "dopers" and "victims" appeals to us as reasonable. Undoubtedly, one must differentiate between the defectives, the vicious, the degenerates that use morphine, and the victims of disease or distress that have acquired the habit more or less innocently or under protest. It is a point worth making that the latter want to be cured, while the former do not. Undoubtedly, there are many indications that must be considered in the treatment of morphine-addiction, and nobody, not even the most enthusiastic supporter of luminal, would dream of depending upon a single drug.—ED.]

IRON IN ANEMIA

The article in the April number of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, (p. 254), entitled "Iron in Anemia," is very timely. During the last century, the laity got their iron by putting rusty nails in any old bottle and filling it up with vinegar, whereas, at present, they eat the jackets of boiled potatoes, or spinach. There is no harm in either practice, but, is it safe and clean? The occupation of the pharmacist dates back to the writing of Exodus, and there cleanliness is imperative.

L. M. YOUNG.

San Francisco, Calif.

WAR SLANG: "PIU-PIU"

In your note on "War Slang," June number, page 465, you ask about piu-piu, "how comes the reduplication"?

Piu-piu is Italian; *piu* means more and *piu-piu* means, literally, "more-more." The French have an equivalent in *beaucoup plus*. In Ferrari and Coccia's Italian Dictionary, I find the following: *"Piu-piu, cosi reduplicato, ha forza di superlativo."* That means that piu-piu is the superlative of piu. As I say, the French have *beaucoup plus*, as a superlative of *plus*. The Spaniard, to use another example, says *poco-poco*, as the superlative of *poco*. For example, there is a certain gait of a horse which is called the *"poco-poco"* trot.

I should not be surprised to learn that piu-piu may be a corruption of *peu-à-peu* (French for little by little, by degrees). We, as a rule, are not good linguists and our pronunciation of foreign words is marvelous. Take for example the beautiful French salutation at parting "à Dieu" (or "adieu"), which means, "Go with God," or "God be with you." Then compare the English (or American) pronunciation "adoo"! It is not at all impossible that our boys would pronounce *peu-àpeu* "pew-pew." And there you would have your piu-piu. I do not say that this is so, but, it might be.

C. L. STEENSEN.

New York, N. Y.

[The French-English dictionaries translate *piou-piou* as soldier or infantry soldier; and the "Petit Larousse Illustré," as also the larger encyclopedic dictionaries, explain *piou-piou* as a popular term for *soldat de la ligne*. It seems probable that *piu* merely is a corrupted spelling of *piou*.

On the other hand, many correspondents believe that *piu* here is the Italian word,

"more"; yet, we confess our inability to see the connection, the assumption of a corruption from *piou* being, seemingly, more reasonable.—ED.]

THE MEANING OF PIU-PIU

The article entitled "Didonk: A New War Slang," on page 465 of the June number of CLINICAL MEDICINE, arrested my attention. The expression "piu-piu" is not French, and *pioupiou* in all probability was intended. The origin is obscure, but, originally had reference to the cry of the sparrow. It has been translated to "peep, peep," the voice of chickens. It also means a soldier of the line, just as an infantryman is called a "tourlouron."

L. M. YOUNG.

San Francisco, Calif.

SHAPING UP CRIPPLED FEET

Since the war began, a number of young men that were rejected because of crippled feet have consulted me about their trouble. Some of these rejections were entirely justifiable, while others were not.

A story is told of a mountain-lad of Tennessee who came to a recruiting station to enlist. The examining surgeon pronounced him physically perfect, except that he had flat feet. "Well, can't I get in, anyway?" "Why, no, you could not march five miles." "Well, I don't mind telling you why I hate this so bad. I walked 120 miles across the mountains and I do hate awfully to walk back." The doctor evidently could not distinguish between congenital flat foot and flat foot from a broken-down arch.

Until this recruiting business brought it up, I had no idea of how a number of minor foot ailments, each one in itself amounting to very little, collectively could completely disable a strong man. One such case is that of a strong, well-built young man of 22 years who stood 5 feet 11 and weighed 165 pounds. The only thing noticeable about this fellow's physical condition was a peculiar double-shuffle walk. After I had examined his feet, the walk was easily accounted for. He had, first, bromidrosis of the nth degree; second, a hard corn on every toe and a soft one between each little and fourth toe, one of which was infected and had granlation-tissue under the corn with pus oozing from between the toes; third, a fine bunion on each foot: fourth, chilblains, the skin on both feet, from the little toe back half the length of the foot, being a purple color. No wonder he had a peculiar walk! And his troubles were not due to neglect on his part, for, he had been treating his feet energetically, but, they had been getting worse all the time. After three weeks' of treatment, this man came in to show results from our treatment. He looked at his feet admiringly and remarked that, if his feet had been like that when he took his examination, he would have got in all right. The pathetic tone in his voice showed that it hurts a proud young man dreadfully to be rejected for such a cause.

Treatment for such cases I begin with the operating-room technic for disinfection, soaking the feet in a hot standard solution of potassium permanganate for twenty minutes and then in a cold solution of oxalic acid for a few minutes. The alternate use of hot and cold is the best way to stimulate capillary circulation. Next, dry with a coarse towel, holding it at both ends and with a sawing motion rub the soles into a warm glow. Lastly massage thoroughly with the following skin-lotion:

Mercury bichloride	grs. 15
Ammonium chloride	grs. 15
Resorcin	dr. 1
Listerine	ozs. 8

This lotion is good in any itching skin disease, especially fine for seborrhea: also one of the best for chafing in the groins from marching. Lastly, it is a superb louse-catcher, and every soldier's kit should contain a bottle of it.

For the corns, I employ this combination:

Salicylic acid	dr. 1
Lactic acid, concentrated	dr. 1
Resorcin	dr. 1
Flexible collodion	drs. 10

Label: Apply to the corns twice daily for four or five days, when the corn can easily be removed.

For chilblains and tender bunions, the following is effective:

Carbolic acid	dr. 1
Solution of lead subacetate	drs. 30
Glycerin, enough to make	oz. 1

Label: Apply twice daily.

For sweating feet, this powder is excellent:

Salicylic acid .....dr. 1
Boric acid .....drs. 2
Exsiccated alum, powdered.....oz. 1
Talcum power, enough to make....ozs. 2
Label: Sift into the shoes.

For infected corns and bunions or any injury, try the following mixture:

Compound tincture of iodine.....drs. 2
Phenol-camphor .....drs. 6
Compound tincture of benzoin.....oz. 1

This antiseptic and healing lotion is another one that should be in a soldier's kit. As a first-aid dressing, it has no equal, but, is especially good for infected sores and wounds of every kind. It also is good for stopping toothache. Small wounds of the face treated by the open method and painted with this lotion will heal very rapidly and with a minimum of scarring.

W. A. MARNER.

Miles, Ia.

INFANT FEEDING THAT PREVENTS INTESTINAL DISORDERS

My views on this subject are in direct opposition to those of the profession in general, but, the results of the generally accepted methods are so very unsatisfactory that I am more than willing to hear of my own methods having been put to a tryout, to compare results.

First, we are taught that an infant should always be nursed by its own mother. This is a great error and is the direct cause of a large percentage of infant mortality. In country practice here, 20 percent of women have no milk for their offspring and in 30 percent more it is so poor that the little ones do much better on cow's milk, thus leaving only 50 percent of mothers that can successfully nourish their babes.

So, I have, for many years, made it a rule, when a child does not do well, to have it weaned and put on modified cow's milk. At first, the mothers objected, showing that the old idea that the mother's milk is the only thing good for the nursling, was universal among the laity, as well as among the profession; however, my patrons have gradually learned better and now they never raise any objections.

The methods of modifying cow's milk, as published in modern textbooks and now generally practiced, are too complicated and cumbersome for general use, besides being so very illogical. They begin with a much-diluted milk, and every two weeks or so direct it made a little stronger, until ultimately the milk is given full-strength.

Mother Nature does not do it that way: she starts the infant upon full-strength milk (mother's) and gradually weakens it, so that at about six months the infant acquires an appetite for solid food and is thus gradually and naturally inducted into taking more of a variety of food.

And right here I want to challenge another universally accepted theory, namely, the idea that an infant can not digest starchy food. Why is it that the little ones, after they are four or five months old, have such an inordinate liking for potatoes, bread, and crackers? And, I have never seen any but good results from the judicious use of these foods just as as soon as the child manifests a craving for them.

The best method of modifying cow's milk for infants is by using Fairchild Brothers and Foster's peptogenic milk powder, which yields a product as near to perfection as can be attained. I have, however, learned to be particular in its use. It won't do to give a mother a package of the powder and tell her to use it according to the printed directions—which are simple, plain, and explicit enough—but, I always insist upon having an expert nurse go and show the mother how to prepare the milk. I have employed this method for nearly twenty years and have not a single failure to record.

When I first came to this place, the hot months of summer used to be my busy time with the intestinal disorders of the little ones. Cholera infantum, diarrhea, and dysentary were rampant. After several years of this, I came to the conclusion that it was all due to the neglect of the simplest laws of hygiene. So, I started a campaign to educate my clientele upon how to take care of their babies.

First, of course, came the matter of feeding, to which I have referred to above; but, children, however well fed, will get their alimentary tract out of order occasionally, and the mothers were instructed how to detect and remedy this as early as possible; for, prevention is easier than cure, and they soon learned the magic of a few pink calomel tablets, followed by a dose of castor-oil or a saline laxative

(those who have children keep these remedies on hand). And now nearly all other regulations, such as exercise, bathing, clothing, et cetera, need not be detailed here; suffice it to say that the results from that campaign have been exceedingly good, one of the most gratifying accomplishments in my whole professional career. I have not seen a case of cholera infantum in ten years, and in all that time not more than a dozen cases of other intestinal disorders. And that is not all; those children who get through the summer in such good shape are practically immune against colds, bronchitis, pneumonia, et cetera. Through the long and severe last winter, I had but one case of bronchopneumonia in a child to treat.

W. A. MARNER.

Miles, Iowa.

REVIEWS AND REMARKS

In the last number of THE AMERICAN JOURNAL OF CLINICAL MEDICINE report is made of a case of delirium tremens that was not cured, but, rather, made worse by capsicum. That unnecessary suffering was caused by using only water and much too large a quantity of capsicum, is apparent. Had the proper drugs been diluted with fresh sweet milk, the cure would have been perfect. There is, also, a sly wink at the "yarb-doctor" as our inferior.

Now, while I am some generations removed from those ancient writers, I thought it worth while to go back over the history of medicine—"lest we forget"—the source of our origin. The first doctors were those who took things first-hand from nature and, by extracting their virtues by cold or hot water, made the medicaments with which they treated the sick. As men grew wiser, tinctures and fluid extracts were made. Then came powders and pills and wafers and capsules and tablets, and, latest and best, the concentrates, in the form of alkaloids, glucosides, resinoids, and so forth.

In my youth, I accompanied my father, who was a doctor of the regular school, as he sought for materials for his materia medica. This was in this country and before the civil war. In earliest spring, he took me to the low lands by brooksides and showed me the first symplocarpus fœtidus. Later, when balmy breezes blew through the beechen woods, we stood among the opening buds of the poccoon, both white and yellow. As the season advanced, we dug the roots of the podophyllum peltatatum and the geranium maculatum, and in late season those of phytolacca and serpentaria. Here I stood face to face with nature, reading her wideopen book of botany, and learned at first hand the uses of some of her medicinal treasures.

Later, I went to college. I was attending the regular medical school, but, had an acquaintance who was attending the eclectic school. There, they used only native plants, as the idea taught was that our own country was able to produce all the medicines necessary for the care of disease.

Those eclectic boys we found to be a wideawake, intelligent set of fellows, and, with specific diagnosis and specific medication and Merrell's medicine, they went out more particularly into that quadrant of our territory west and south of Cincinnati from the Pacific to the Gulf, and made good. And today the Lloyd's specifics are as fine drug extracts as can be had, yet, special pleaders are liable to lack in some ways.

On my part, I followed the regular program, but also I took all I could get from any other school that had anything to present.

When the alkaloidal granules came, with what alkalometry had to say, I felt that we had really reached the higher peaks, along which our path had been laid for many years.

And now, as I close this brief review of ancient days, I pause to lay a last fond tribute on the grave of that great man, my father, whose wish was, to sleep with no tomb to mark his resting-place. Long years before Ian McLaren had made immortal the Scotch doctor William MacLean, my father, Dr. C. H. Cope, of Colerain, Ohio, had lived the ideal life, had practiced medicine and surgery for forty years, and his death closed the triumphant life of the country doctor, whose years were spent, not for himself, but, for others.

It is with reverent hands that I touch the lavender-scented old lace that wraps his memory and behold the beauty of a life whose recollection is an inestimable possession.

A few years ago, I published an article in this journal, on the use of emetine. Later, a doctor wrote in this same journal

that he had no use for emetine, that he cured all his emetic cases with Dover's powder, and that that was good enough for him.

It is a truthful statement that there is no true Dover's powder without ipecac and, further, there is no good ipecac without any emetine content. As emetine is the amebicidal agent in ipecac, it follows that this was the curative agent in the Doctor's cases. The only way that Englishmen could overcome the terrible bowel trouble of that country was by means of large doses of ipecac—the same effect now being obtained by small doses of emetine.

But one more heretical statement and I am through.

At a recent meeting of the American Medical Association, I was much interested in the biological products presented, and, on talking with the representative of one of the largest concerns producing antitoxin, I asked him whether it contained any carbolic acid, and he admitted that it did contain some. I asked him whether it were not possible that this phenol content really were the true germicidal agent in this remedy, seeing that in earlier years before antitoxin was known, we successfully cured the most malignant cases of diphtheria by applying pure beechwood-creosote; later using pure carbolic acid.

The heretical suggestion I offer is this: Let those engaged in vivisection try out carbolic acid in the strength as present in antitoxin and report results. It often is found that the small things of this earth are able to rise up and confound the mighty.

C. S. Cope.

Detroit, Mich.

[Phenol is present in biologic remedies usually in a strength of 0.4 percent. Experiments with such a solution of pure carbolic acid have proved it to be inefficacious as a germicide for pathogenic bacteria.—Ed.]

THE CONSULTING PHYSICIAN AND THE PHYSICIAN WITH WHOM HE CONSULTS

There are times when a physician feels the need of counsel. There may be something difficult or obscure about the case he is attending or he may have failed to find the right remedy to cure a patient. Then, again, the family may be dissatisfied with the progress of the case and ask for counsel. On very many cases, I am sorry to say, another physician is called in merely to bolster up the opinion of the attending physician, to confirm the diagnosis, to put the seal of approval upon what has been done for the patient. He reports to the family with a great deal of satisfaction that "the consultant agrees with my diagnosis and says that I am doing all that can be done for the patient." I also have known of doctors being called in consultation on a case, and they told the attending physician one thing in the consultation-room, the family something else, and the neighbors something entirely different. Such men are not to be trusted and are not the kind to be called in consultation.

What should be the real object of calling another physician in consultation? There can be but one answer: to help a doctor cure his patient. Else, why call him in consultation?

I have, in my practice, had to call for counsel a few times, and at such times I always chose a doctor who, I thought, knew more about the case than did I. I always selected a doctor who had a reputation for curing his patients. It made no difference to me whether he agreed with my diagnosis or not. If I was wrong in my diagnosis, I wanted to know it; but, most of all, I wanted his advice as to how to cure my patient.

I have known of doctors who, when called in consultation, would be all right in the consulting-room, agree with all the attending physician had to say. They would pat him on the back and tell him he was "a good fellow and knew his business"; however, when this same consulting physician got a chance to talk alone with some member of the family, he would say: "Of course, you know, the doctor has not had much experience and does not understand cases like this. I am very sorry that you did not call me at first, for, I could have saved the patient."

How many good doctors have been stabbed in the back and undermined by the devilish insinuations of the consulting physicians? This happens so frequently that we often ask ourselves the question, "Is there honor and decency in the medical profession?"

In conversation with a medical friend of mine, he mentioned a prominent consulting

physician (since dead) and he said of him: "Whenever he is called in consultation, he always tries to get the patient away from the attending physician." And this form of treachery is not an uncommon thing among our doctors—more's the pity.

A doctor who has a mania for operations is not a safe man to call in consultation; for, his hobby is surgery, and he can not see anything outside of that. A physician's reputation depends solely upon the cures that he makes. Every cure that he makes, either alone or through the advice of a consultant, adds just so much to his reputation and binds the people more closely to him. Therefore, in a difficult or critical case, naturally he will call upon a physician as counsel who, he thinks, will help him cure his patient.

A good consulting physician is a broad-minded, liberal man, a progressive man, one who is up to date, who has the best there is in medicine, a doctor who has had wide experience in the successful treatment of difficult cases. If a physician can not cure the diseases common to our country, he will not be of much help to you in the consulting-room. Very many doctors called in consultation are well informed on the technical part of their profession, but, are weak on therapeutics. Such men are not of much use in consultation. A narrow-minded, bigoted man, a one-idea man, the man with a fad or hobby likewise will not be of much help to you in the consultation-room.

Now, the doctor who knows materia medica is a tower of strength in the sick-room, a Godsend to a brother physician in the consulting-room. A friend of mine, in discussing a certain physician, said: "When that doctor wants counsel, he always calls Dr. Blank, and that doctor loses about every patient he treats." Of what earthly use is such a man in the consulting-room? If he can not cure his own patients, he certainly can not help anyone else to cure theirs.

A physician who is building up a reputation upon the cures that he makes is building upon a solid foundation. A doctor of that kind is a safe man, a good man to call in consultation, for, his skill, his knowledge in the art of healing the sick will be of real, practical help to you.

Most of us know that book-knowledge of materia medica is one thing, but, actual clinical experience with the remedies is an entirely different thing. Therefore, a real knowledge of materia medica must be learned by testing the remedies at the bedside of the sick. This is the acid-test of what a remedy will really do for the sick.

In my study of materia medica, I took up the best book I could secure on materia medica of a certain school of medicine. I studied it early and often, until I had a working-knowledge of the remedies of that particular school of medicine. Then I practiced that system of therapeutics exclusively for several years, in order to test the remedies myself at the bedside of the sick. In this way, I have, at different times, practiced for several years the regular, eclectic, homeopathic, physio-medical, and biochemical schools of medicine. This is the only way to study materia medica, if you want to know it. To accomplish this task, it has taken me nearly fifty years, but, it has been time well spent, and now, in the sere and yellow leaf, I can say, with the Talmud, "I know my power, because I have learned from many teachers." I would not part with the knowledge, that I possess, of the materia medica of all schools of medicine, for the wealth of a Rockefeller. For, it is *the* thing that has helped me to do things in my profession; it is *the* thing that has helped me to be of real assistance to a brother physician, when he sent out an "S. O. S."

A physician who knows the materia medica of all schools of medicine has infinite resources to draw upon in his battle with disease. In his power over disease, he becomes almost invincible, for he can almost always find a remedy to save human life or alleviate suffering.

In my time, I have been called into forty states of the Union in consultation with physicians of all schools of medicine. When I am called in consultation with a brother physician, I always keep this one thing in mind, that my business there is, to try to help him cure his patient, and I concentrate my mind upon the one thought: to give him the best there is in me. I take just as much interest in trying to cure the patient as if it were my own, and, when the sick person gets well I am just as much pleased as if he had been my own patient.

Doctors do not always carry out the advice of the consulting physician. I have seen remedies given and something done

absolutely contrary to my instructions and which interfered with the remedies I had suggested, thereby lessening the chances of the patient's recovery.

The consulting physician and the family physician must, first of all, have confidence in each other. They should be open and frank with each other at all times and in all places. The treatment agreed upon in the consulting-room should be carried out carefully and honestly; if not, then of what use has the consultation been? When a course of treatment has been agreed upon, a schedule should be made out, outlining how and when each remedy prescribed is to be administered, as also written instructions that may be necessary to serve as a guide for the nurse. The family physician gives the schedule to the nurse, and she is expected to carry out the course of treatment laid down.

It sometimes happens that different members of the patient's family will "butt in," criticize or find fault with the treatment, and say how they think the case should be managed. In such cases, it is best to pick out the most-level-headed person in the family, generally the head, and give him or her to understand that the nurse has her definite orders and that she must not be interfered with.

You may be called in consultation with a physician and find his treatment has been entirely different from what you would have given; but, be chary of your criticism. There are times when silence is golden, and this is one of them; however, you may, possibly, say: "Now, doctor, if this were my case, I should treat it so and so."

If you are called in consultation with a doctor of a different school than your own, unless you know the materia medica of his school of medicine, you can not talk intelligently with him about the remedies he has used. Therefore, any criticism from you on his treatment of the case would be in bad taste and entirely out of the question. Some consulting physicians endeavor by their talk and manner to impress the family with the idea that they are "it"; that they know it all, and that the family physician is a mere cypher, in their estimation. If you are a smarter man that the attending physician, rest assured the family will find it out without your taking special pains to inform them of this fact. The American people are intelligent, and they can generally tell a real physician when they meet him.

A consulting physician should be extremely careful about what he says to any of the family or the patient. Where he is in consultation, he should give the impression to the family that he respects their family physician and has confidence in him. If he can do so, it is always best to say something nice about the doctor and about his treatment of the patient. This leaves a good impression upon the minds of the family and family physician. A foolish grin, a sneering remark (behind the doctor's back) has been like a "stab in the back" to many a good doctor and has helped to undermine him in the confidence of the family.

There are certain individual rights that every American citizen has, and they are a personal matter with him: (1) to choose his own church, his own form of religion; (2) what his politics shall be and what party he shall identify himself with; (3) what school of medicine he shall belong to or what system of therapeutics he shall practice. I repeat, these are personal matters, and you have no right to ask a doctor what school of medicine he belongs to, any more than you have to ask him what church he belongs to, or what political party he is identified with.

Oh, if only we could forget our isms and pathies, all our prejudices, our petty jealousy, and only remember that we are *physicians,* here to heal the sick, what a grand world this would be and how much good we could accomplish for God, for our profession, and for suffering humanity!

ELI C. JONES.

Buffalo, N. Y.

IS THE FAMILY PHYSICIAN TO BE REPLACED BY THE COOPERATIVE CLINIC?

Yesterday I heard a lament. Amidst mental sackcloth and ashes, with a gnashing of teeth and a wailing of voices, a certain gentleman declaimed in this fashion:

"I am neither a poor wage-earner nor a rich man; I am an average, middleclass man of family. There are five of us and I manage to save very little out of my $3500 annual salary. When my colored man or my white cook fall ill, they go to the Johns Hopkins Hospital dispensary. For

15 or 25 cents, they are able to have the 57 different tests made and instruments applied that are necessary to assemble the various facts which I, as an engineer, know to be necessary before a true judgment as to a disease and its correct treatment can conscientiously be given. In this way, a poor person is able to obtain kidney tests. blood estimation, Wassermann reactions, blood counts, Abderhalden tests. x-ray pictures, sputum analyses, stomach washings, and the other score and more methods required to obtain facts of a person's real physical health or its absence. Similarly, the wealthy man is able to pay the 10 or 20 dollars each for $500 worth of facts.

"Not so the average honest man of family, as I. I can neither afford the hospital tests nor dare I go to a free clinic or dispensary, where all these things are honestly carried out.

"What can I do, then, but follow the customs and traditions of the ages? I must have a family doctor. And a family doctor, able, conscientious, and industrious as he is, can afford neither the time, the circumstances, nor the equipment necessary to make all the different tests that are called for. The upshot of this is that I foolishly think his ability and his experience and his knowledge of my anatomy give him an occult, uncanny ability to suck the truth out of his thumbs without any exact facts to go on."

All that Mr. B., the engineer, said is almost wholly true. To obviate all this, I have been advocating for some years that pay-clinics and cooperative clinics be established. Others have promoted like innovations in this field, and at last the pay-clinic idea has begun to take root in the Brooklyn Hospital, the Boston Dispensary, the Massachusetts General Hospital, the Lakeside Hospital of Cleveland, and the East Baltimore Medical Society of Baltimore.

The cost of truth, as it is in medicine today, is either a few cents for the poor or a small fortune for the rich. The average honest man is dependent upon doctors, who, however honest and able they may be, yet, are too busy or also too poor to spend the money and the six or more hours necessary to gather the facts about the spinal fluid, stomach-juices, blood, urine, sputum, and other outcroppings of your tissues. In order to make the securing of this information possible, family physicians must gather together and form pay-clinics, where each of the score of doctors must do a definite share to unearth facts before administering advice.

If the doctor is thus employed at the rate of $5.00 for each two hours and seven hours a day, the patients will receive the latest scientific service, while the doctor's income will be $5,250 a year, net. This would be equivalent to him of a $10,500 family practice and the facts and data discovered would be the same as a rich man pays hundreds of dollars for.

It is up to the family doctors and their patrons to establish pay-clinics that in time might equal the Johns Hopkins or the Mayo clinics. Then the civil population's health will begin to approach that of the army, about which Surgeon-General Gorgas has just written:

"The world has never seen a better army than America is putting into the field, and the standard is constantly rising. The death rate decreases as the health conditions improve. The best record previously was that of the Japanese army, which was 20 per thousand. Ours is only 8 per thousand, and in some regiments only 5 per thousand.

"The American boy is safer in the army than at home, and, except when sweeping casualty lists come in, the death rate will be much lower than in civilian life. Social diseases are being rapidly curbed, if not eliminated, and the chief obstacle we have to contend with in that line is with the recruits from civil life."

In fine, soldiers are safer in war than in peace; safer in the army than in a religious civil community.

L. K. HIRSHBERG.

Baltimore, Md.

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[Doctor Hirshberg's recommendation of pay-clinics has rather a wider application than appears from his outline. For some years, groups of physicians in small and large towns throughout the country have combined for the purpose of making available to their patients of moderate means the facilities and benefits of modern methods in diagnosis and treatment. While the socalled pay-clinics are intended for the benefit of wage-earners, small tradesmen, and so forth (to establish a purely arbitrary line, let us say for people with a family income of $1,800.00 or less per annum),

these combinations of physicians serve the purpose of benefiting the members of the salaried middle class, bookkeepers, professional men, tradesmen, people with incomes of from $2,000 to $6,000 or so, who have a certain position to maintain and to educate their children, and who find it very difficult to meet physicians' bills or other extras, for that matter.

In addition to this, there is the idea, proposed many times, the subscription service. That is to say, a physician proposes to his families that they pay a stated amount for each member of the family per year, say, $5.00 per head per year, and that, in consideration of this payment, the physician agrees not only to attend to the members of the families when sick, but, also, to do his best to keep them well. Indeed, it will be to the interest of both parties if the physician devotes his attention mainly to prophylactic endeavors and he protects his clients from becoming ill.

In this manner, the physician would receive a stated income, while his clients would be glad enough to know that everything is being done to ward off impending sickness, with its attendant loss of salary, time, and so forth.

Now, as to the group-services, these comprise, very naturally, examinations on the part of the internist, the eye, ear, nose, and throat man, the genitourinary specialist, in short, include complete physical examinations, for a moderate sum of money, by which the condition and functioning power of all organs of the body are determined. A sort of inventory ascertaining the assets and liabilities of the examined person. The result of all these examinations then is discussed in consultation and a diagnosis of any existing deviation from health is made and the best treatment agreed upon and carried out under the supervision of that member of the group who is most fitted to undertake it.

Such cooperative work on the part of groups of physicians, comprising anywhere from four to six members, might be combined suitably with subscription services, it being understood that the subscribers are to present themselves for complete examination once or twice every year. In the case of actual illness, especially if this is chronic and difficult of diagnosis, it is self-evident that much greater benefit would accrue to the patient from cooperative study of several physicians whose interests are devoted especially to different special diseases than if the patient were in the hands of one general practitioner who simply can not be a highly accomplished specialist in every branch of medical knowledge.

We believe that the future, indeed, the near future, will bring many changes regarding the socioeconomic status of physicians in their relation to their patients. Even if the change to state medicine outright is not impending very soon, the pay-clinic idea is bound to grow and, with it, the idea of group-services, both of which are necessary to extend to the people of moderate means the benefits of modern science. There are many points in this problem that would be interesting, but, this editorial comment hardly is the place to discuss them in detail.—ED.]

THE WAR AND TUBERCULOSIS.

France is finding in tuberculosis one of the worst of war's byproducts. Before the conflict had continued two years, her hospitals were filled with soldiers suffering from the plague, while facilities for adequate care were lacking. The following facts as to measures invoked are extracted from a recent report by Dr. William Charles White, chief of the Bureau of Tuberculosis of the American Red Cross in France:

When the American Red Cross, in cooperation with the Rockefeller foundation, entered the fight against tuberculosis in France, the *Service de Santé* of the army was utilizing all the main French institutions, and there was little room available for the women, children, and old men suffering from the disease. Last October, there were 8,879 tuberculous French soldiers not yet discharged from service, and for these 6,521 beds had been provided in 37 hospitals. Between August, 1914, and November, 1917, there were 80,551 soldiers discharged from the army on account of tuberculosis, and the French department of the interior undertook to provide for their care by means of *stations sanitaires* and departmental committees.

Until recently, practically no provision had been made for that portion of the population that had been engulfed by the German advance into France and Belgium, and, no longer being of any economic use

to Germany (the aged, the young, and the diseased), had been sent back into France. A large proportion of these are consumptive. The wretched housing-conditions in which many refugees were compelled to live in Paris and elsewhere helped to make them peculiarly subject to tuberculosis.

A careful survey of the field indicated that the Red Cross could render most effective assistance among these groups. The first opportunity for usefulness came in the survey of conditions in the tuberculosis-barracks that had been provided by the *Assistance Publique* in connection with the large hospitals and alms-houses in Paris. There were 1052 beds in them; yet, only 174 were occupied. Unattractive conditions seemed to explain, in large part, the failure of the sick to make full use of this institution. The American Red Cross thereupon increased the nursing force, established diet-kitchens and recreation-rooms, and provided additional clothing and needed materials. The institution quickly became more popular and soon was caring for 657 patients. Later, new rest-halls, dining-rooms, and recreation-rooms were constructed by the Red Cross.

A survey of the institutions outside of Paris showed that these provided 11,000 beds for a population of 39,500,000 persons, with a total death rate from tuberculosis of 84,443 in 1913. Many of these institutions required additional bedding, food, and equipment, which the American Red Cross undertook to furnish at an expenditure of approximately 100,000 francs a month.

Another plan, similar to the home-hospital plan in New York City, now is being followed in France, especially for those refugee and repatriated families with tuberculous members. These might spread infection if allowed to go into ordinary houses. The new plan contemplates placing such families in small houses especially constructed for the care of a tuberculous member. Each house is composed of three rooms (two sleeping rooms and a living room) with a small porch for the patient. The children will be placed in open-air schools and those able to work will be given vocational training in such trades as gardening, carpentry, tailoring, and shoemaking. The domiciliary care of the consumptive, it is believed, is one of the most important factors in the war against tuberculosis in France, as elsewhere.

After studying the question of the relation of tuberculosis to the various armies, it was decided that the American army, no matter how careful the exclusion of tuberculous men from the draft, still would have to deal with a group of cases that would develop from existing lesions not possible of diagnosis in earlier examinations. It was thought that this was a field of work in which the American Red Cross could give assistance to our own army in France. It seemed obvious that there would appear certain pneumonic types of tuberculosis, acute miliary cases, severe hemorrhagic and pleuritic cases, and probably a number of cases of tuberculosis in parts of the body other than the lungs.

An offer to the army headquarters, to provide a hospital near the shipping ports where the Red Cross would be given permission to take care of such cases needing attention prior to their return home, has been accepted. The American Red Cross will undertake the erection of one such hospital, which then will be turned over to the army. A similar institution may be provided at a second point.

Four tuberculosis-hospitals in France are now maintained and conducted solely by the American Red Cross and 96 French hospitals are aided with funds and supplies, while, in addition, much educational and visitational work is being done.

IS THE BIOLOGIC TREATMENT OF INFECTIOUS DISEASES ARTIFICIAL OR NATURAL?

In one of the quasi medical journals which stand for drugless treatment and vegetarianism, which flirt with New Thought, Osteopathy, Chiropractic, etc., the editor, in an article on infantile paralysis, ridicules the idea that the disease is caused by an infectious virus that invades the organism from without, maintaining that the determination of this question is not a laboratory secret that is to be conquered, but that its origin must be sought in filthy blood and clogged bowels. He claims that the "danger of transmission by contagion or infection is exaggerated, and the assumption that infantile paralysis is caused by a germ carried from person to person is without foundation." * * * It has not been possible to de-

cide even with reasonable probability where children caught the disease; the truth is that they did not catch it, they generated it within themselves."

As a corollary of this view, the author deprecates the attempt of laboratory-workers to find a biologic remedy, for instance, a serum that will be effective for the cure of this disease. He maintains that a curative serum will never be found, "because it is not natural to heal disease by artificial treatment."

The author then proceeds to outline a "natural" course of treatment, according to which the "first thing to do on reaching a case of infantile disease is, to wash the intestines with repeated warm water enemas, little enemas, suitable to the age of the child and oft-repeated, and little doses of hot water by the mouth repeatedly, with frequent hot-water spongings of the skin, and these things done well at the beginning; and the child is saved and well in a few days and probably without paralysis." He calls this procedure the natural treatment, saving treatment, and curative treatment in infantile paralysis.

There can be no doubt of the merits, importance, and necessity of employing the socalled natural, that is to say, the general hygienic and dietetic methods of treatment in this disease, exactly as in all others, whether they be bacterial or protozoal in origin or due to perverted metabolism; and it may not be amiss to determine what is meant by "natural" and what by "artificial" treatment.

On general principles, it may, probably, be said that a form of treatment which reestablishes the normal functioning of the organism is a natural treatment. If artificial treatment, so called, is mentioned in a deprecatory manner, as opposed to common-sense and to natural treatment, it will be well to find out whether that treatment which is designated as artificial is really such.

It is granted freely that the treatment applied by the author—namely, washing out the intestines and employing hydrotherapeutic measures—may be called natural. However, the author is mistaken when he characterizes the biologic treatment as artificial, whether this be applied in the form of serums or bacterins; and, if the author says that "the attempt to heal the body, self-poisoned by filth within the system, by serums is only adding foreign matter to an already poisoned child," it is to be inferred that he has not given sufficient attention to the study of bacterial therapeutics to understand the facts.

The assertion may be made without fear of successful refutation—in fact, it is a truism—that *bacterial therapy constitutes the natural treatment of bacterial diseases.* The explanation of this apparently paradoxical assertion lies in what we know of the behavior of the organism when it has been invaded by pathogenic bacteria, and also of the response of the organism to stimulation with bacterial remedies.

It may be admitted at the outset that the theory concerning the resistance of the organism to infection is pure theory; still, this theory is supported by very strong circumstantial evidence, confirmed by the acid-test of practice.

In brief, it is believed that the organism responds to the invasion of bacteria or of other organisms that tend to cause disease, by the development of substances that are antagonistic to the multiplication and life itself of the foreign organisms, that tend to dissolve them and to remove or eliminate them from their host-organism.

It is not necessary here to inquire into the role played by the phagocytes and by the antibacterial serum-substances in this resistance to disease. It is sufficient to know that the mechanism of defense and of opposition becomes active immediately after infection has occurred. If the struggle against the invading harmful virus is successful, the infection will not develop into disease; in the other event, disease occurs, and is severe and progressive in that degree in which the defensive forces of the organism fail in their object.

Even if disease has declared itself, the body may rally its defensive forces, and these may become sufficient to overcome the virus, to eliminate the infection and to repair any harm that has been done. This is what takes place, particularly in those cases of acute self-limited infectious diseases that end in recovery. The activation of the natural defensive forces undoubtedly is promoted and fostered by a treatment designed to free the organism of effete matter, to cleanse it of its impurities, to improve nutrition, and to raise the general tone of the body. And, in so

far as this is accomplished by general hygienic and dietetic methods without recourse to powerful drugs, the treatment may be called natural.

The opinion, according to which the prevention of disease, and its cure, depend upon the sufficient and efficient formation of antibacterial substances, is supported by the fact that certain of these substances can be demonstrated by serodiagnostic methods in greater amounts in favorable cases than in unfavorable ones, and that they persist for some time after the symptoms of the bacterial infection have disappeared.

In formulating a plan of treatment for these diseases it is argued correctly that it should be necessary to assist the body in the formation of antibacterial substances, and it has been found that this result is attained by the introduction into the circulation of killed bacteria or bacterial substances. After such an introduction, the development of antibacterial substances is promoted, and after a brief reaction (the explanation of which here would lead us too far) a distinct improvement is manifested in the condition of the patient, which is greater than that observed in parallel cases treated by "natural" methods alone. In so far as the body is stimulated by these bacterial substances to produce its own antibacterial substances actively, the method is correctly designated as active immunization.

In very acute and severe infection or disease, it is not always practicable to introduce bacterial substances, especially if the infectious bacteria are carried in the blood in great numbers, and here active immunization cannot be considered, at least not during the acute stage of the disease. However, it is possible to supply to the infected organism the needed antibacterial substances which it does not produce in sufficient amount, because they can be obtained in the serum of animals (usually horses, asses, mules, and goats) in which an infection with the related virus has been produced, in a manner by which the related disease is prevented. These immune-sera have been employed with great success in various acute diseases. At present, the hope is entertained, with reason, that it will be possible to elaborate a curative serum against infantile paralysis.

The administration of a curative serum is designated as passive immunization in so far as the treated organism is furnished the antibacterial substances that it requires, and is saved the exertion of elaborating them by its own active efforts. An instance of passive immunization is, the antitoxin treatment of diphtheria and of tetanus.

In so far as bacterial remedies (bacterial vaccines or bacterins and curative serums) aid in the activation of natural forces of fection, the treatment of bacterial diseases defense and struggle against bacterial in- by their means is entitled to be classed among the *natural* methods of treatment.

The objection to "introducing foreign matter" or "introducing animal filth" into the diseased organism has a catchy sound and seems to be well calculated to impress the uninformed and ignorant. Nevertheless, it is based upon specious and incorrect reasoning. It must be admitted that in passive immunization the antibacterial substances are introduced in a vehicle (serum) which is "foreign" to the diseased organism, and the objection which can be raised on that score has occupied the minds of physicians. Unfortunately, it has not been found possible thus far to obviate this difficulty, and, in the case of poliomyelitis, it has been suggested to minimize the difficulty by employing homologous serum, that is, serum obtained from humans who have recovered from the disease and who, by virtue of this recovery, carry effective antibacterial substances in their serum.

The reproach, if reproach it be, of employing "artificial treatment" for a bacterial disease does not apply justly to biological methods. These are no more artificial than are hydrotherapeutic, dietetic, and other physiological and physical procedures. Even massage is more artificial than is bacterin-treatment.

Vaccine-treatment is effective in its own sphere. It needs support, it must be supplemented by other measures, and the physician who takes into consideration all the points that need attention will be more successful than the one who employs only vaccines as the medicine-man has recourse to incantation, and more successful than the one who limits his attention to general, hygienic, dietetic, and hydrotherapeutic measures.

Chicago. H. J. ACHARD.

In the World War

LETTERS FROM FRANCE—I

Another section of the U. S. Army Ambulance Service has been cited for its brave work, as shown by the following order of the general commanding the division of infantry in question:

"Sanitary Section U. 553 of the ——— Division, in the course of the recent operations, under the energetic direction of Lieutenant-Adjoint Albert Smith, gave proof of devotion and daring, by assuring night and day, in villages much bombarded, the transport of the wounded whom the drivers, in order to hasten the evacuation, went to fetch with contempt for the danger, even from the first-aid posts of the battalion."

The following members of Section 553 also received individual citations: First Lieutenant Albert E. Smith, commanding the section; Sergeant Albert Fetler, Corporal Mortimer Lenihan, Private Edward Bickel, Private Warren C. Brown, Private William C. Cole, Private James J. Culhane, and Private John J. Way.

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Doctor Nettar presented, recently, before the Academy of Medicine a new form of disease, which he named lethargic cephalgia, this resembling, in some of its traits, tuberculous meningitis and that of the cerebrospinal variety, but, differing notably, in that the new disease is accompanied by persistent somnolence and ocular troubles and by the total absence of any reaction in the cerebrospinal fluid.

This malady was described some years ago under the name of "nona," being found in the Alps of Italy and the mountains of Hungary and Dalmatia; cases have also recently been observed in Vienna and in England. It is infectious and epidemic, with a mortality of nearly 50 percent; if cured at all, it is only after some weeks of treatment. English investigators attribute the disease to intoxication from damaged food, but, Doctor Nettar believes it to be of microbial origin. He has had success from treatment with hexamethylenamine, but, does not believe the disease can be controlled until the proper serum-treatment is found.

Doctor Coudray presented the case of a soldier afflicted with a gaseous tumor of the neck immediately following the bursting of a shell of large caliber near him. Upon examination, the first several rings of the trachea were found ruptured, which rupture was explained by the extraordinary and violent involuntary effort to combat the sudden and unexpected air pressure caused by the explosion—following the instinct of self-preservation.

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A report drawn up, by the British Local Government Board, from statistics secured from a German source shows that the decrease in the German birth-rate during the three years of 1915, 1916, and 1917 is equivalent to the loss of 2,000,000 children.

These statistics bring out the fact that the war robs a country of its virility. The thirty years of Napoleonic wars robbed France of all her young manhood and it has taken a century for this handicap to be overcome and the quality of the race to be slowly improved to its present level The present war comes at the moment when the French race was just entering upon a new era of renewed physical and mental vigor slowly built upon the shattered remnants of the devastation which followed the career of Napoleon, and now we see the flower of her race again sacrificed, to preserve her ideals of justice and freedom.

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What is the economic value of a young healthy man? A gentleman has made this offer: He will raise a body of men, say, 1,000, that are above forty-five years of age (the draft-age limit is 31), but, who can pass a rigid physical examination and are willing to volunteer as regulars in the place of a like number of selected, edu-

cated soldiers of the age of 21. The condition is, that the young men shall be returned to the United States and be given absolute immunity from actual service at the front.

This man believes that 1,000 superior young men, selected from the ranks because of their physical, mental, and moral

qualifications, would, in the succeeding years of their lives, be of more service to the United States than the 1,000 men who have passed their prime and whose prospects, according to the mortality-tables, are only 50 percent of those of the younger men.

His theory is, that the 1,000 young men, being given absolute immunity from war, in consideration of their devoting their lives to noble purposes, would develop into expert guardians of the public health, morals, and politics and would form a nucleus of a vast body of men who would, in later years, become underwriters of a national development, which would be at once unique and unparalleled in the world's annals.

It is conceivable that this body of young, healthy, educated men, with the incentive of the possibility of transmitting to future generations in an endless chain of progression so much of value in the way of educational, moral, religious, and political uplift, would overbalance the loss of a like number of older men to an incalculable degree.

War robs every country of its flower of manhood and leaves for the rearing of future generations the old, the decrepit, the invalided, and the weak. Is it not reasonable that a certain number of young men, carefully selected, should be saved from the ruin and given an opportunity to confer such permanent benefits upon posterity?

This viewpoint is open to certain arguments, but, they do not seem to me to be as conclusive as the affirmative arguments of the gentleman who proposes the plan of raising this small army of substitutes.

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Realizing the vital importance of the food conservation for the success of the Allies, attention of the officers commanding the

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Ring Finger Transformed Into Thumb.

American forces has recently been called to the subject. Severe food restrictions and sterling sacrifice are energetically practiced by our people in the United States and offer a striking example that has won the admiration of the Amex forces.

Liberal increases in the food rations for troops serving in the front lines or engaged in hard manual labor have been granted.

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Laboratory at the Base Hospital at Camp Meade.

but, precautions have been ordered, to prevent excesses or wastage. Officers have been requested to emphasize to their commands the special importance of food economy and the furthering of the successful campaign now being carried on by the patriotic folk at home. The purpose is, to conserve the food supply as much as possible, while assuring sufficient amounts for actual use.

The scheme includes the presence of a company officer at each meal and the investigation of the quality of the food, its preparation and conservation. Special attention has been called to overhelpings that result in wasteful leavings, utilizing the surplus fat for kitchen-grease, economy in the use of bread and butter, use of breadcrusts and stale bread in preparing the various dishes, throwing away or disposal of usable food in incinerators, and so on.

Definite steps have been taken for the enforcement of this economy, including frequent inspections by staff-officers and disciplinary action for violations of this request. The object in view is, the avoidance of waste in any form, and not a reduction of the rations.

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The development of modern warfare has necessitated the adoption by the medical department of the Amex forces, of two types of mobile sanitary formations, which, in the French army, are known as *autochirs, autonomes,* and *groupes conplémentaires.*

These units have been designed, in order that facilities for immediate surgical aid to the seriously injured may be brought to a man, instead of removing any chance of recovery that the nontransportable wounded may have by conveying them an uncertain distance to hospital.

The mobile hospital consists of fixed sterilizing x-ray and electric lighting plants, mounted on two autotrucks. In addition, upon ordinary autotrucks, are a light-framed operating-room, tentage, and hospital material sufficient to establish a surgical hospital of 120 beds. The mobile surgical unit consists of portable sterilize-

ing, x-ray, electric lighting plants, a light-framed operating-room, and surgical material, mounted on two autotrucks. It does not provide hospital facilities.

The unit supplements the equipment of the advanced field hospital and provides re-

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Healed Wound Ready for Repair.

quisite surgical facilities for immediate surgical aid to nontransportable wounded.

B. E. SHERWOOD-DUNN.

Paris, France.

THE "KHAKI PRISONERS-OF-WAR-FUND"

"An urgent appeal to the generous public of the United States, addressed on behalf of the British prisoners of war in Germany," has reached us recently. This is signed by Lieut.-Col. Lord Willoughby de Broke, Chairman of the "Khaki Prisoners-of-War Fund."

Although it is to be foreseen that, the more our armies participate in the battles against the central powers, the more American soldiers will become prisoners of war in Germany, yet, this appeal is made to the American public, confident that even with the many burdens existing, means may be found to make the lot of British prisoners of war in Germany more tolerable. There are many thousands of British prisoners in Germany today that are living almost exclusively on the parcels-post consignments from home, which consist mainly of food; and all the stories that come to us indicate that the food shortage existing in Germany affects the prisoners of war even more than it does the German people.

Under these circumstances, and, while, of course, we shall have to do all in our power to support and supply our own American soldiers with food, still, we are mindful of the fact that this war against the militaristic and autocratic powers is fought out, not by the British, the French, the Italian, the American troops, but, by all the nations who desire to defend the cause

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Damage to Face Successfully Covered.

of civilization and to secure safety and healthy progress of the nations.

From this point of view, the call for aid on the part of the "Khaki" Prisoners' of War Fund is not a special one; our aid may be extended to them, even as it is to American soldiers. Even though we give as much as we can to all the funds that are being collected, and give it gladly, nevertheless, there may be a few dollars or one dollar or a quarter dollar that we may

turn over to this worthy fund. Contributions may be sent to the Honorable Secretary, "Khaki" Prisoners' of War Fund, 11,

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Facial Disfiguration Removed, in English Hospital.

Southampton Row, London, W. C. 1., England.

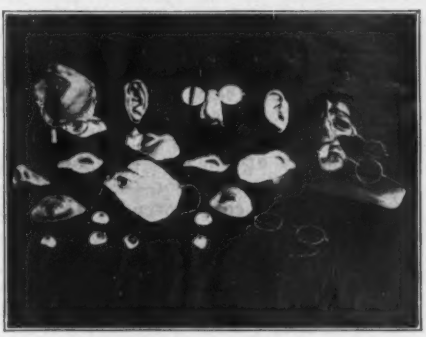
WORRY PREDISPOSING TO SHELL-SHOCK

W. Frank Persons, director-general of the Department of Civilian Relief, American Red Cross, who has been spending four weeks with the American Expeditionary Forces in France, claims that frequent cheerful letters from home help to make American soldiers less subject to shell-shock.

"Any worry about the condition of his dependents or relatives tends to put a soldier into a condition where he is subject to shell-shock," said Mr. Persons. "I have this on the authority of eminent specialists that are dealing with such cases in the military hospitals. A soldier who is untouched by bullet or shell may, from shell-shock, return to his trench in such nervous condition as to require hospital treatment and a long rest. The best insurance against this serious byproduct of modern warfare, the physicians say, is, for the man to go over the top or meet a charge in a buoyant, untroubled frame of mind, in which his sole concern is the serious business at hand. Cheerful letters from home help to produce the proper mental attitude, but, confidence that the home-folks lack for nothing is an essential foundation.

"That our men may be protected as far as possible from worry about their families and that nothing else that will maintain the morale be left undone, it is obvious that the American people must see to it that no family of a soldier lacks for anything that will enable it to write honestly cheerful letters abroad.

"To the American Red Cross, has been given leadership in this vital undertaking. With utmost sympathy, its 40,000 workers, organized as the home-service sections of 5,000 Red Cross chapters, have come already into friendly touch with 300,000 families of soldiers. Whatever the need, this need has been met at once either directly by the home-service section or in cooperation with local agencies."



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Attachments to Correct Facial Disfigurations.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

The Social Evil and Its Results

AT the base of all life, are two instincts —self-preservation and procreation. Without these, all life would perish from the face of the earth.

The first operates without conscious effort. The other involves consciousness, and, in the human phase, it suffuses the organism throughout the larger part of life. With the male, it is dominant. That this dominance assumes a larger lawlessness, brings up a question of morality, with which in the present consideration I have nothing to do. The fact of that lawlessness is back of the condition that has come to be known as the "social evil."

The social evil is as old as society, coeval with mankind. History goes not back to a time when statutes, confessedly human or professedly divine, were capable of controlling this evil.

The history of humanity—its poetry, its romance, its very religion—is little more than a Joseph's coat woven in the warp and woof of Love and Passion in the loom of time.

The evil itself interests the physician, and should interest society, solely as a source of disease. The question, really, before civilized peoples everywhere, and the one that concerns the entire medical profession, goes directly and solely to means whereby the evil may be so treated as to cease to be a cause of physical corruption.

When I say "physical corruption," my view goes further than the immediate persons first infected. It includes thousands of innocent people—wives, mothers, infants —for, the unspeakable taint is ignorantly passed on to these other victims, and the sins of the fathers are actually visited upon their children unto the third and fourth generations. This black cloud hangs low over many homes. Its noxious edges touch the health and safety of whole families, even of whole nations. It is a plague, ever present, diffused as widely as humanity itself, and far more deadly, more difficult to deal with, than the plague of consumption. These two, the white plague and the black, are the deadly enemies of our modern life.

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In dealing with the white plague, medical art and sanitary science have had free play. The results have been of inestimable value, though they are as yet far from complete. Doctors, humanitarians, and sanitarians have had free scope of discussion and complete liberty in the matter of precautionary as well as curative instruction and action. There was nothing that could not be freely spoken of in terms of itself, anywhere, in any hearing. A course of education by counsel, of eradication by treatment, open and above board, was and is, not only possible, but is invited.

See what has been done. The white plague—tuberculosis—one of the most deadly in the long catalog of human afflictions, is being abated, not gradually, but, rapidly. It is not too much to hope or even to expect that in another quarter century, or half century at the furthest, it will have almost if not wholly disappeared.

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But, in the case of the other plague, the one we call the black, what has there been done? Through the operation of one of the strangest and most unhappy anomalies in the better life of our time, the evil is abhorred and decried, but, restriction and preventive action has been, and is denounced and opposed by those very classes whose complaint against it is loudest. Prudery often amounting to prurience surrounds and hampers every attempt to do the things that are necessary to be done for its abatement. The eyes of the religious are obstinately closed to the facts that must be recognized and dealt with.

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The one thing clamored for by the virtuous-ignorant is the one principal thing

that can not be accomplished. I mean, total suppression of the wretched trade from which this dreadful scourge has its perennial flow. That trade can not be suppressed by any human agency. You might as well try to cure a virulent ulcer by sealing its surface; an operation that would simply force the poison through all the gates and alleys of the body. Let us clearly understand that one indisputable, immovable fact. Common sense, based upon experience, obliges acceptance of the unfortunate fact that prostitution can not be abolished. No human law, in my opinion, can be enacted that will greatly impede public or, what is more dangerous, clandestine prostitution.

This understanding is a necessary precedent to any course of action from which amelioration or abatement can be hoped. All the clamor that puritanical spinsters, cloistered doctrinaires, and sentimental purists may raise against it will change it not one whit. Why?

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Lubricity is the product of imaginative excitation operating upon the procreative faculty. The story of the world, so far as we can trace it, has shown that all civilizations, as they reached higher and more complex forms, have developed polygamous practice, either with or without the sanction of law. Emancipation from primary conditions of brute labor has always brought increasing leisure and ease, with an accompanying spread of indulgence of all the appetites. Our own enlightened state shows very slight advance in that respect—if any—over Nineveh and Tyre. One has but to read the report of the late municipal vice-commission of Chicago to learn that this statement is abundantly true.

A few thousand years are all too short to bring any measurable change in human character, tastes, appetites, and habits. The differences are racial only, and racial differences arise from climate and the influences of physical geography. Certain fundamental qualities and propensities are common to all. The impulse of procreation is the most common. It is universal. In some parts of the world, as thought grows freer and fancy finds time from hard pursuits to dwell on luxury, it diverges from its merely natural and necessary purposes and finds expression in promiscuity. Look back over the level of two thousand years to the groves of Daphne, and see how this indulgence was entwined with a religion and made lubricity no more a thing immodest than a church fair of our own times. In times more ancient and in other lands, worship was directed through phallic emblems of the frankest representation. We are not so far removed from even those days that we have left their traces all behind us. Maids and matrons going into church pass through a door over which towers a spire, brought down from the ages when the priapus marked the place of devotion, while the arched portal itself still speaks of the "door of life"—or yoni, of yore—the symbol of female procreativity. We are not removed *at all*, in the true sense.

There is a relativity in all things. Time means much to those who count it; nothing—in the life of the universe or even of this, our planet. It is because our retrospect of history is in the horizontal plane that we call things ancient and think them different. Greece with her glory, her literature and her lusts was comparatively modern. Undoubtedly her people had their own retrospect of other peoples, who looked to them as in turn they themselves now look to us, and as in our turn we shall look to the peoples living a few thousand years hence. To get a truthful view, it is necessary for the mind to rise high enough to look downward upon the whole terrain and all the peoples enclosed in its horizon. Take that position, and the difference between peoples in any corresponding stages of advancing life and enlightenment will be found to be very slight indeed. In the underlying, elementary things, they are all alike—and we are like them all.

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And, in every stage of development at all corresponding with that which we find ourselves, there persisted this same social evil, having for its cause the nagging impulse of sex in the men; and having in its many strata one stratum deep down—dark, noisome and pestilential—where dwelt the women of a great army of the lost: always an outcast army, always despised, always through the exercise of its one function preying upon the vitals of the people, always tainting the whole stream of life with the same horrible poison. And *always owing its existence, its presence in all times*

to the demands, the insistence, the rude enforcements of men—to the blind urging of the protozoid. Misery, desolation, and death are its concomitant powers. Corruption is its one product. The false lure of an unreasoning pleasure is its very forehead. Its feet take fast hold upon hell.

Let us be fair. Puritanical condemnation is not. These dangerous, miserable women of short and fevered life, to whom the world holds out no hope, for all their horrible estate, are women still. I can not present their case better than in the words of Lecky, that great and openminded English moralist, who speaks of the type as "that unhappy being whose very name is a shame to speak, who counterfeits with a cold heart the transports of affection, scorned and insulted as the vilest of her sex, and doomed for the most part to disease and abject wretchedness and an early grave." And, continuing: "She is in every age the perpetual symbol of the degradation and sinfulness of man. She remains, while creeds and civilizations rise and fall, the eternal priestess of humanity, blasted for the sins of the people." Hear his solemn plea for her, as being at the same time the ultimate type of vice and ultimately the most efficient guardian of virtue. "But for her," he says, "happy homes would be polluted, infanticide would increase, unnatural and most harmful practices would abound." I can not go as far as Lecky does, when he says that prostitution acts as a safeguard for the innocent. This is contrary to experience. It is an insult to such degree of civilization as we have already reached to say there are men enough in any city whose passions are so violent and uncurbed that but for the existence of public prostitution they would ravage and destroy till they became a public menace.

Dr. Denslow Lewis has well said: "All supply is regulated by the demand. If there were no demand for the harlot she would not exist. She is among us, because our civilization, education, and religion have not yet succeeded in teaching the possibility of continence, the advisability of charity, and the dignity of virility. When that is done, the first step will have been taken toward the regulation, not of prostitution, but, of that dominating force in our nature known as sexual instinct. For the present, the prostitute is an integral part of our social fabric and her depravity and degradation are possible *because man insists.*"

"After all is said and done, the social evil is a man—not a woman problem—commercialized by man—supported by man—the supply of fresh victims furnished by men—men who have lost that first instinct of chivalry and that splendid honor for womanhood where the destruction of a woman's soul is abhorrent and where the defense of a woman's purity is truly the occasion for a valiant fight."

Let us still be fair. The wanton is a fact, constant in the whole story of the world. Her pitiful, sordid trade is a concomitant of life itself, in all organized forms of society, and the reason for that lies, not with her, but with man, the primary hunter. If the suffering of which she is the instrument is to be abated, we must look with level eyes upon her case and its reasons why, and deal with it with unfevered hands. In that way, only, can we accomplish any measure of safety. This is a necessary thing to do, for, it is only too evident that "the stain of disease is spreading."

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Alcohol, tuberculosis, and venereal diseases are the three great plagues that afflict humanity. In the presence of the last, we remain impassive and indifferent; efforts to crush out the evil have proved futile. Moral crusades have been made through the strong arm of the law and police, to restrict prostitution, but, with but temporary and only partial success. Experience has amply proven that legislative force can not suppress the evil; that no police or sanitary network is fine enough to serve as a dragnet for the offenders. All sanitary regulation to stamp out the disease, all moral crusades to purify the social atmosphere, and all repressive measures employed by the state to crush out the evil have been directed against women alone. The man may emerge from the mine of dissipation without a spot of social shame upon his character; he may return from his haunts of vice and mingle freely with the virtuous women of his social set. The man reeking with immorality should no longer with "unabashed forehead" enter the sacred circle of virtuous women and consider himself not un-

worthy to ask the hand of a pure young girl in marriage.

As long as men may, without scruple, without violation of social laws, with what one might term the tacit encouragement of society, freely consort with immoral women, without incurring any social stigma, so long will they continue to infect innocent women, whom they marry, with diseases that soil them, that poison them, and which kill them.

At the present moment, according to no less an authority than the American Society of Sanitary and Moral Prophylaxis, "fully one-eighth of all the disease and suffering which afflict humanity is due directly or indirectly to incontinence." Incontinence, that is, among men.

A committee of the New York County Medical Society, appointed in 1901 to investigate the subject, reported as "a conservative estimate" that, of the one million people walking the streets of New York, at least 200,000 were infected with venereal diseases. Doctor Bulkley's calculation was that New Yorkers affected were increasing at the rate of 50,000 annually. In a paper published in the Ohio Sanitary Bulletin for March, 1906, Drs. Fred C. Valentine and Terry M. Townsend, of New York, said that, though the figures given must understate the truth, yet, if we accept them, we must also accept that today there are in the United States some 16 million people infected with venereal diseases. The same careful estimate would give these polluted ranks an increase of 3½ million annually.

Dr. P. J. Haigis, of Foxboro, Massachusetts, quotes expert authority for the statement that, of the 14,000,000 young men in this country today under the age of thirty, 50 percent have some venereal disease and that from 75 to 90 percent of all our men have contracted some taint. Another physician of the very highest standing, Dr. Charles Edward Nammack, president of the Guild of St. Luke, New York, presents these appalling figures: Venereal disease, he says, causes 90 percent of all cases of locomotor ataxia, 75 percent of all ocular paralysis, 80 percent of all cases of paresis, and 42 percent of all abortions, besides being the cause of death in from 60 to 80 percent of syphilitic children born alive. One form of venereal disease causes 75 percent of all pelvic inflammations among married women, 80 percent of blindness in the newborn infants and 15 to 25 percent of all cases of blindness.

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I do not care to go further in cataloging the extent and spread of these infections. I cite these as my reasons for regarding the condition as a disease-evil, primarily, and only in a secondary sense as social. I have no sympathy whatever with the impractical demands of excited purists who do not know the world they are living in and who demand forcible suppression or abolition of this evil. It can not be suppressed or abolished, any more than can be anything else having its cause deeply implanted in our physical natures. The much less serious evil of alcoholism has successfully defied suppression, even when the broadest powers have been invoked. The appetite here involved lies far deeper down than the appetite for strong drink, and its persistence, the awful effects that come of it, are by that much further beyond the reach of prohibitive enactment or suppressive measures of any kind. "By sin came death into the world," and this evil has its root in primal sin. It is as unevadable, as little subject to organized abolition as death itself.

When I use the word sin, I wish to be understood as implying an infraction of those plain laws by whose observance alone health can endure. The dogmatic meaning has no place here. The animal act, the abuse of which causes the evil, is as natural as any other animal act, and as necessary as the act of nutrition. Without either, life would soon fade out. You have to go back to the primordial bioplasm before you see an example of reproduced life without it. Of all living organisms, the toadfish is the only one still possessing the power of parthenogenesis. We are hopelessly in advance of the toadfish. Your frantic advocates of suppression or abolition would have to herd the race back down that immeasurable road before they could get us upon that level; and I gravely doubt whether any of the people would care to assume the independence of Hermaphroditus, with all that would imply. We have to deal, not with theories nor clamors, but, red-blooded realities, setting aside sentiment, as such, and work out by rational, practical methods the utmost possible deliverance from the most ex-

tremely dangerous of all prevailing diseases.

How are we to do this?

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The answer is short and emphatic: By recognition, regulation, and education, and by better economic conditions. Now, let me say that recognition is not sanction. Recognition is not legalized approval. It simply means, in regard to prostitution, that we acknowledge its existence, as we are forced to do in cases of murder, rape, arson, degeneracy, imbecility, poverty, and other crimes and deplorable conditions.

"I believe our twentieth century," says Doctor Lewis, "has so far advanced that we are willing to give even the prostitute a square deal. We no longer cut off her ears or affix the scarlet letter. We treat her fairly, for, after all, she is a woman following the dominant instinct of the sex. If we restrict her residence or if certain police regulations apply specifically to her, we simply force her to submit to personal inconvenience and occasionally to interference with personal liberty, for the benefit of the body politic. We regard her specially as a source of contagion; if we insist upon quarantine, it is because we wish to minimize the danger of infection to the community. The important fact, in relation to the prostitute is, not that we decide to do this or to do that with her—it is a hopeful sign of the times that we are willing to do anything with her except condemn her or, what is worse, to ignore her." Brothels no longer are the chief factor in prostitution. The character of prostitution is changing and the methods of dealing with venereal diseases must change. The future, it is now beginning to be felt, belongs neither to the police regulation of prostitution nor to "laissez-faire" indifference, but, to the general sanitary control of disease on the basis of the common law.

(To be continued in October issue)

OPPORTUNITY

Master of human destinies am I;
Fame, love and fortune on my footsteps wait.
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace soon or late,
I knock unbidden ONCE at every gate!
If sleeping, wake; if feasting, rise before
I turn away. It is the hour of fate!
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death. But those who doubt, or hesitate,
Condemned to failure, penury and woe,
Seek me in vain, and uselessly implore;
I answer not, and I return no more.

J. J. INGALLS.

Among the Books

VEDDER: "SYPHILIS"

Syphilis and Public Health. By Edward B. Vedder, A. M., M. D., Lieutenant-Colonel, Medical Corps, United States Army. Published by permission of the Surgeon-General, U. S. Army. Philadelphia and New York: Lea & Febiger. 1918. Price $2.25.

The importance of the subject of syphilis cannot be too highly emphasized. It is one of the most prevalent of all infectious diseases, causes an incalculable amount of suffering and economic loss, and, because it has so far eluded sanitary control, it is a constant menace not only to the licentious but to the clean-living public as well.

The pernicious influence of syphilis upon the health of its immediate victims and, worse by far, upon their progeny, has come to be understood only since the Wassermann test was applied as a matter of routine to hospitalized and dispensary patients in large numbers. What had been suspected before by some far sceing pathologists and clinicians, then was proved indubitably, namely, that syphilis is the real cause of death in all cases of paresis, locomotor ataxia and aortic aneurism, in many cases of cerebral hemorrhage and apoplexy, organic diseases of the heart, liver and kidneys, and that it is a contributory cause of death in a host of other conditions, including, perhaps, one-fifth of all cases of pulmonary tuberculosis. This fact alone should be sufficient to make it incumbent upon every physician, especially every general practitioner to study the disease syphilis in all its phases and manifestations, in all its malignant and disastrous consequences. It is for this reason that the present discussion of the relation of syphilis to public health deserves careful study and attention. The author has inquired into the incidence of the disease; he has secured accurate information as to the various methods of transmission; and discusses the practicability of the different methods that may be suggested for preventing this transmission. In recent years, much new light has been thrown upon the entire chapter of venereal diseases, and the lessons to be learned therefrom should be utilized for the greater good of humanity. The author's painstaking researches and discussions merit the fullest acknowledgment and his book should be studied carefully by every physician; for, every practitioner, no matter what his specialty, comes in contact frequently enough with one or another of the daughter-affections of lues venerea.

LYDSTON: "IMPOTENCE AND STERILITY"

Impotence and Sterility with Aberration of the Sexual Function. And Sex-Gland Implantation. By G. Frank Lydston, M.D., D. C. L., Chicago: The Riverton Press. 1917. Price $4.00. Sold by subscription only.

A book on aberration of sexual function, by Doctor Lydston, must carry weight because of his wide experience and year-long studies in diseases of the genital organs. It may be remarked, by the way, that Doctor Lydston was one of the first to extricate genitourinary diseases, or, rather, those unfortunates afflicted with them, from the clutches of irresponsible quacks and that the recognition of this branch of the healing art, as a legitimate specialty of medical practice, is owing largely to his persistent efforts.

The outstanding feature of the author's argument is, that he has brought sexual aberrations and functional abnormalities into causal relation with disturbances of the internal secretions; which at once suggests a definite remedy. To quote: "If the author's view be correct, sexual perversion and inversion—with or without physical aberrations—are purely biochemic in origin, and, if taken early, susceptible of cure by implantation of sex-glands, thereby adding to the economy during the period of sex development, a certain quantity of a new and better quality of sex-hormone. The author is convinced, moreover, that there is a great advantage in the fact that

the added hormone usually is of an alien strain. So logical does the foregoing seem to the author, that he believes that a certain proportion of cases of perversion and inversion, if treated prior to adult age, are hopeful cases for the procedure."

The considerations of sex anomalies, occupying about two-thirds of the book, are followed by the discussion of sex-gland implantation in which the author is a pioneer. It will be recalled that he had sufficient faith in the correctness of his theory to perform an operation on himself in order to test the feasibility of the procedure; and with very remarkable results in various directions. The chapters on this topic are of great interest, if only for the reason that the operation has given at least encouraging results in the treatment of dementia præcox. If the author's enthusiasm is justified, and if his theory is well founded, as seems to be the case, the possiblities of the operation suggested by him are far reaching and may make possible successful treatment of many abnormal conditions that now are beyond our active influence.

The doctor's experimental work primarily, and, secondarily, his clinical observations of his method of gland implantation suggest that the method will be valuable in anemias and conditions due to presenility. Doctor Lydston believes that in cardiovascular disease sex-gland implantation is likely to prove of great service. The illustrations contained in the book comprise some remarkable microphotographs, notably one showing nascent spermatozoids, and several in which the hormone-producing cells of Leydig are clearly shown in sections of glands which had been implanted and subsequently, removed at various times.

The subject matter dealt with in the volume before us, naturally is decidedly difficult to treat. Yet, the author has succeeded in keeping the text free from all objectionable or offensive expressions. The Reviewer recalls a discussion of this book, in another journal, in which it is suggested that it seemed to have been written for the purpose of supplying unwholesome thrills to the prurient-minded lay-reader. Such a charge is as undeserved as it is ill-founded. There is nothing said that is not unobjectionable in form and expression. The entire discussion is dignified and in keeping with the importance of the subject. Physicians, as well as jurists and educators, also social workers, may well study this book with great profit to themselves, and, indirectly, to those in their charge.

SIMON: "CLINICAL DIAGNOSIS"

A Manual of Clinical Diagnosis, By Means of Laboratory Methods, For Students, Hospital Physicians and Practitioners. By Charles E. Simon, B. A., M. D. Ninth Edition, Enlarged and Thoroughly Revised. Illustrated with 207 Engravings and 28 Plates. Philadelphia: Lea & Febiger. 1918. Price $6.00.

At the present time, the physician who tries to practice without the employment of laboratory aids deprives himself of much useful assistance that would enable him to serve his patients much better than he can otherwise. The course in clinical pathology, indeed, is one of the most important and practical studies that students have to pass, and that physicians must continue throughout their years of practice. For this purpose, of course, suitable textbooks and guides are a primary consideration, and it needs only to announce that a new edition of Simon's manual has appeared to indicate one textbook that every physician can employ with much satisfaction.

MALTBIE: "PRACTICAL PHARMACY"

Practical Pharmacy for Pharmacists and Physicians. A textbook for students in medicine and pharmacy. Second edition. By Birdsley L. Maltbie. New York: The Druggists Circular. 1918. Price $3.00.

The first edition of this book was prepared in order to provide for students and practitioners information, in convenient form, that otherwise would have to be searched out laboriously in the cumbrous textbooks, or which is offered, in but fragmentary form, in brief compends. The need, especially on the part of practitioners, of more complete pharmacological knowledge has been great for many years, ever since the actual value of drug-medication has been called into question by certain authors following the teachings of the younger Vienna school. The first enthusiasm engendered by the brilliant successes of modern surgery seemed to make non-surgical treatment of virtually any disease a useless waste of time, and physicians who still retained a faith in suitable remedies properly administered were few, and often they appeared called upon to, almost, apoli-

gize for their antiquated methods. However, the pendulum has commenced its backward swing some time ago. The value of proper drug medication is again being acknowledged; and, now the necessity of exact and correct information becomes all the more urgent. Physicians owe thanks to Mr. Maltbie for the excellent textbook which he has prepared, since it is of actual, not of purely academical use. The second edition differs from its predecessor mainly in that the changes in the Ninth Revision of the United States Pharmacopeia have been incorporated. The book will be found a very serviceable working-manual, especially for those physicians who, for whatever reason, dispense their own remedies. But, for the prescribing physicians also, the information contained in its pages will be of service, as it will help to guard them against many errors in prescribing.

"PRACTICAL MEDICINE SERIES"

Nervous and Mental Diseases, edited by Hugh T. Patrick, M. D., and Lewis J. Pollock, M. D., being Vol. X of *The Practical Medicine Series* 1917. Price $1.35.

Skin and Venereal Diseases, edited by Oliver S. Ormsby, M. D., and James Herbert Mitchell, M. D., being Vol. IX of *The Practical Medicine Series* for 1917. Price $1.35.

General Medicine, edited by Frank Billings, M. S., M. D., assisted by Burrell O. Raulston, A. B., M. D., being Vol. I of *The Practical Medicine Series* for 1918. Price $2.25.

We have often referred to the usefulness of this excellent periodical publication in which the notable contributions to current literature are reproduced in a form that is particularly serviceable for the general practitioner. *The Practical Medicine Series* is published in eight annual volumes and covers the entire field of medicine and surgery, each volume being complete on the subject, to which it is devoted, for the year prior to its publication. The arrangement in several volumes makes it possible for those interested in special subjects to buy only those parts that they desire for their own work. Yet, it seems to the Reviewer that the general practitioner would here just find that information concerning the specialties that he requires to secure and maintain a wide and general outlook over the whole field of medicine; while, on the other hand, to specialists there is afforded in this series a ready means by which they may keep in touch with the whole field of medicine and surgery, thus avoiding becoming one-sided and thereby limited unduly in the practice of their particular specialties by which limitation their clinical sense inevitably would become stunted.

WHITE: "LECTURE COURSE ON NATURAL METHODS"

A Lecture Course to Physicians on Natural Methods in Diagnosis and Treatment: Aids to Humanity Helpers. Seventh Edition, Revised. By George Starr White, M. D. Los Angeles. Price, $15.00.

Doctor White is well known to many physicians for the ingenious dynamic methods which he employs for the diagnosis and treatment of many diseases. He has recently elaborated his previous lecture courses into one large volume embodying the information that he formerly communicated to his pupils directly. This book contains an immense amount of information on methods that are not usually found in orthodox textbooks. That does not mean that they are "no good." Rather, on the contrary, surprising results have been secured with them. To the many students of Doctor White, his latest work will be a welcome addition to their library.

McKENZIE: "RECLAIMING THE MAIMED

Reclaiming the Maimed: A Handbook of Physical Therapy. By R. Tait McKenzie, M. D. Illustrated. New York: The MacMillan Company. 1918. Price $2.00.

This little volume dealing with the methods employed for rehabilitation of wounded soldiers is uniform with the "War Manuals" and presents authoritative information on the subject with which it deals. The topics are so many and so diversified that a detailed review is impossible. However, the methods are those found most useful. They are explained clearly and concisely, and the excellent illustrations accompanying the text serve to impress the lessons more firmly.

"FRENCH MEDICAL VOCABULARY"

Through the courtesy of the publishers, P. Blakiston's Son & Co., we are in receipt

of the little "French Medical Vocabulary and Phrase-Book," prepared by Joseph Marie and distributed with the compliments of the publishers. This little pamphlet contains about 2,500 medical words in frequent use, practical reference-tables, and numerous phrases helpful in giving first aid to the injured. The words listed are well selected, and the Reviewer notes with satisfaction that no attempt has been made to visualize the mode of French pronunciation by any phonetic method. The little pamphlet is very handy for carrying in the pocket, and we advise physicians to ask the publishers for a copy.

"THE MEDICAL CLINICS OF NORTH AMERICA"

The current number of *The Medical Clinics of North America* is the Chicago Number and presents, as always, much interesting information. The far reaching importance and the disastrous consequences of syphilis infection are shown in a clinic of Doctor Mix on aortic regurgitation, aortitis, and aneurism on a syphilitic basis; also in the clinic of Doctor Elliott on syphilis of the aorta. Doctor Strouse discusses a case of juvenile diabetes in twins, also the Karell treatment of edema, and the importance of details in the treatment of angina pectoris. Radium treatment of leukemia is described by Doctor Elliott, while Doctor Tice speaks on epidemic respiratory infection. There are other interesting clinics in this volume, but, the titles cited will be sufficient.

The Medical Clinics of North America is published bi-monthly by the W. B. Saunders Company, the subscription price for six volumes a year being $10.00.

"PROGRESSIVE MEDICINE"

The current number of *Progressive Medicine* contains an interesting review on hernia, which seems to occur with increasing frequency during wartime. Professor Kœnig, of Marburg, regards the loss of adipose tissue, due to changes in the ordinary diet, responsible for this fact. The loss of weight, particularly of adipose tissue, together with an unusual amount of physical strain, he believes, readily explain the frequency of hernia since the beginning of the war. A large collective review in this number is devoted to diseases of the abdominal organs, especially the stomach. In the abstract of gynecological literature, we read, somewhat to our surprise, that the retention of a portion of ovarian tissue or its transplantation to the abdominal wall is not a positive preventive of "ablation symptoms." Whether this observation can be verified or not will remain for further investigations to determine.

Progressive Medicine is a quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences, and is edited by Prof. Hobart Amory Hare, assisted by Dr. Leighton F. Appleman. It is published by Lea & Febiger, Philadelphia and New York. The subscription price is $6.00 per annum.

"TOPICS OF INTEREST TO MIDWIVES"

An unpretentious little journal is being published, since January of this year, by our old friend Dr. Ferdinand Herd, of Chicago, the author of "Beauty and Motherhood," "The Care-Feeding of the Baby," and other books. This journal is devoted to the postgraduate instruction of midwives. With these, as with all others following the va- study is necessary if they desire to give the best services that are possible. To midwives, is entrusted a large share of the nation's greatest asset, that is, the health and lives of the multitude of mothers who come to them for advice and help during the most important periods of their lives. These mothers deserve the best attention, and they should have it.

It is to aid the midwives in their important task and to enable them to do justice to this great work that the little journal in question is being published. To physicians, also, it will prove of interest. It may be secured from the editor, 30 North Michigan Boulevard, at a subscription rate, outside of Chicago, of $1.00.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6394.—Pregnancy or Phantom Tumor?" H., Oklahoma, desires our opinion in the case of a woman, forty-five years of age, in good health since, some fifteen years ago, she had a cystic tumor and the left ovary (also cystic to some extent) removed.

The last natural menstrual period was around the last of December. No more flow till May. Shortly after the period in December, she noticed that she was "getting flat" in the abdomen, as she expressed it. Then, after a short time, the abdomen began to enlarge gradually and about the last days of April felt what was diagnosed as a slight quickening. On May 4, she had a slight hemorrhage, which lasted for three or four days, and very hard pains, simulating labor-pains. As our correspondent, and also another doctor, had made the diagnosis of pregnancy, he had her removed to a hospital, to try to obviate an abortion. The labor-pains continued at intervals for three days, until very slight dilatation of the cervix was made, whereupon they ceased entirely. She has had hemorrhages each month since then, but, her abdomen has continued to enlarge and to assume a typical pregnant form. She has the painless contractions which usually or always accompany pregnancy; and, as for movements, the most she has ever felt to speak of is rather a turning motion with, at times, a very slight tapping or fluttering. Her health otherwise is good, color fine, and appetite the very best, and at no time has she been subject to the morning vomiting.

"As she has quite a thick abdominal wall," the Doctor continues, "it is rather difficult to outline anything with certainty. However, by pressure upon the abdominal walls, the contents of the uterus can be felt very distinctly, except that the shape can not be defined. But, the abdomen is not soft, as it would be supposed to be were this a tumor, and, after the painless contractions, though the walls will be relaxed and pliable, the outline of the uterus will be found to be hard. The breasts are discolored around the nipples, and contain milk; also there are the typically shaped abdomen and the characteristic 'swayback.'

"When at the hospital at the time the cervix was dilated, when she was put under ether, the abdomen did not become 'flabby,' as is usual in the case of tumors, but, remained quite firm, except for the relaxing of the abdominal muscles. Still, the two hospital doctors said, 'No pregnancy'; although they would not say that it is a tumor."

Frankly, doctor, with the limited data at our disposal, we are unable to solve the problem you present. You must bear in mind that you have had this woman under constant observation during the first and second trimesters and well into the third, and, yet, are unable to decide positively whether she is pregnant or not. Again, you state that the physicians at the hospital advanced the opinion that pregnancy did not obtain, but, still would not say that a fibroid or other tumor is present. There is, of course, little doubt but that the picture presented by you is that of pregnancy; however, it must be borne in mind that many women, especially when approaching the menopause, imagine themselves pregnant, that the abdomen enlarges, the menses cease, they feel the movements of the child and even go into labor, having typical pains. Pseudocyesis, "grossesse nerveuse," as the disease is called in French, has even

baffled the diagnostic ability of the ablest surgeons and accoucheurs.

Nevertheless, DeLee states that the positive signs during the second trimester are so definite that the diagnosis of pregnancy may be affirmed without question. "Although," he says, "some authors assert that conditions exist where one must wait until the physiologic end of gestation arrives, for a sure diagnosis, the writer has never met such a case." But, later he states: "Rarely it is impossible to make a positive diagnosis at the end of the sixth month, and in the third trimester all the signs become more apparent and more convincing."

In this stage (the third trimester), the menses continue absent and any show of blood now is either pathologic or means that labor is begining. Morning-sickness usually is absent; active fetal movements are, as a rule, more pronounced, but, as a rule, the child quiets down as labor becomes imminent. The painless uterine contractions become more and more noticeable as the months go by, until, toward the end of the trimester, the uterus responds to very slight irritations. A careful examiner will now have no trouble to find movements of the child. Ballottement is not obtainable unless there is a great deal of amniotic liquor; still, partial repercussion is easily elicited, especially in breech presentations. Direct palpation of the fetal body is plain and toward the end of the trimester is the same as during labor. One may now readily diagnose the presentation and position.

The fetal heart-tones (which we assume you have not been able to discover) are louder and more constant, and one is more likely to hear the funic souffle and active fetal movements. The uterine bruit is more intense and more disturbed. Lastly, the x-ray will always disclose the fetal skeleton.

DeLee, again, states: "Only gross carelessness will explain a mistake in the diagnosis of pregnancy during this trimester. Excessive fat in the abdominal wall, the presence of tumors, anasarca, and general peritonitis, in the author's experience, have caused much difficulty, but, have not rendered a working-decision impossible."

It appears to us that a really careful examination, bimanual and stethoscopic, will enable you to reach a definite opinion, but, should there remain a lingering doubt, the x-ray will infallibly decide the presence or absence of a fetus.

Considering the excellent condition of this woman's general health, it would, it seems to us, be perfectly safe to await the date of natural delivery, having her enter a hospital not later than October 1. Should normal delivery occur, well and good. On the other hand, should abnormal conditions obtain, she will then be in the proper place to undergo such operation as may appear necessary.

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QUERY 6395.—"Uterine Malposition and Sterility." A. J. H., Honduras, relates the case of a married woman, aged thirty-five, who gave birth to a child four years ago, at which time a not very extensive laceration of the cervix occurred and which was not repaired. There was no perineal laceration. Examination shows a well-healed, scarred area over the lacerated portion of the cervix and a slight gaping of the os at that place. The fundus is retroverted, adherent, and can not be raised. There is no marked swelling or hypertrophy of the uterus; in fact, it seems to be nearly normal in size. There is no discharge, the periods are normal, and general health is good. The husband is about forty years of age, in good health, and his semen normal. Neither patient nor her husband have had any venereal disease. They wish to have another child and want to know why pregnancy has not occurred since the birth of the child four years ago. Our correspondent adds:

"I wish to know whether a laceration of the cervix, moderate or extensive, could, of itself, produce a condition that would make pregnancy impossible. As a matter of fact, does this accident, in itself, often or frequently or in the majority of instances, make future pregnancies impossible? Would a lacerated cervix, in conjunction with a retroverted, adherent uterus, necessarily render conception thereafter impossible? On the other hand, would the replacement of the uterus and the repair of the cervix insure another pregnancy, other necessary factors being normal? Can you cite literature or texts bearing explicitly on the subject of the relations between lacerations and retroversions and childbearing? What do you think should be done for this particular patient."

It is absolutely impossible, doctor, for us to express an intelligent opinion as to the

probability of any particular laceration of the cervix, either moderate or extensive, preventing conception. We can, however, definitely state that the existence of such condition does not necessarily render the woman incapable of bearing children. As a matter of fact, a very large proportion of multiparas have more or less of laceration and uterine displacement. On the other hand, while replacement of the organ and repair of the cervix would render conception more probable, it would not be safe to state that such procedure positively would do so.

You will find the subject covered very fully in Ashton's "Practice of Gynecology" and other standard textbooks.

Bear in mind that a very large proportion of women bear one child only, the Neisser bacillus (conveyed by the husband) invading (during the puerperium) the pelvic viscera and setting up conditions that render further fruitfulness impossible.

You state that neither the patient nor the husband have ever had any venereal disease; still it is quite possible for the husband to have suffered a mild urethritis and honestly to be ignorant of the fact.

As the fundus is retroverted and adherent in this woman, surgical interference would seem to be indicated, unless by prolonged posturing, manipulation, and support the conditions can be overcome.

Let us suggest, doctor, that you read up as much as possible on the subject, then examine your patient and write us further. We assure you it will give us great pleasure to render every possible assistance.

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QUERY 6396.—"Endometritis, Salpingitis, and Epilepsy." J. H., Arkansas, requests diagnosis and therapeutic suggestions in the case of a woman twenty-one years old and married about two years. "Weight, 120 pounds; height, 5 feet 3 inches; dark hair, blue eyes, clear complexion; somewhat constipated, menses regular, but, flow excessive, lasting from seven to ten days, stopping for some two or three days, then resuming, very painful and the blood dark; cramping during first two or three days. The right ovary is very tender and somewhat swollen; the left ovary also is somewhat affected. A tender spot exists about two inches above the kidney and one inch from the spine, caused by a fall about four years ago. From that time on, she has had something like epileptic fits. Sometimes she has a few minutes' warning, at others, they come suddenly. The eyes begin to dilate, then her hands close up and she carries them to her cheek; tries to bite her knuckles; becomes very rigid; head goes back; limbs straighten and toes draw down; grits her teeth; pupils dilate and eyes roll back. It takes two strong men to hold her on the bed. These spells last from one-half to one hour, and she has from five to ten in twenty-four hours. After she relaxes, she seems to be in a deep sleep or coma for about one hour, unconscious most of the time. When she awakens, she complains of the right ovary and weakness. When she does not do any heavy work, she will miss those spells for a month or two. Appetite is not good.

"Her husband infected her with gonorrhea five months ago. Since then, she has suffered continually with her ovaries; the uterus is swollen, tender, and ulcerated. Kidneys act freely enough, but, there is some burning when she passes water. The bowels and stomach are tender and swollen. Heart action is weak. She has been confined to her bed ten days. Had a rise of temperature to 100 degrees, but this lasted only two or three hours."

You certainly have an unfortunate condition to deal with in this patient. In the first place, the young woman would seem to suffer from gonorrheal endometritis and possibly salpingitis. We doubt very much whether she will ever regain health until she has been operated upon. The sooner she is placed in the hands of a competent surgeon, the better, as it is possible that at this time sacrifice of the right ovary and tube will suffice.

The fact that she also has epilepsy is a very serious complication. The history would lead us to suppose, however, that the epilepsy followed an injury sustained some four years ago. We must, therefore, regard it as of traumatic origin. It is possible, of course, that there is some spinal injury, possibly a subluxation. Much might be learned from a radiograph in this case.

It is not at all improbable that the epilepsy will disappear after an ovariotomy; but again, remembering that this patien' is epileptic and sustained an injury in the lumbar region, the entire pelvic condition may have resulted therefrom, and the subsequent gonorrhea, which we understand she contracted from her husband at a comparatively recent date (we assume that

there is no question that it was a specific infection?) may be really an unimportant factor.

Under the circumstances, we would strongly urge most thorough examination, preferably in a well-equipped hospital. If this is impossible, we would send a swabbing of uterine discharge and a specimen of urine (four ounces, taken from the mixed twenty-four-hour output, stating total quantity voided) to a competent pathologist for examination.

It is more than likely that the administration of the gonococcus, or better, an autogenous bacterin would prove materially beneficial.

Hot alkaline antiseptic douches should be given every night; immediately thereafter, a uterine bougie containing argyrol, 5 percent, should be introduced. If there is much discharge, protargol and hydrastine hydrochloride may be used. If for any reason a uterine bougie can not be introduced, employ a vaginal suppository containing 5 percent ichthyol, and 1 percent protargol.

The present writer is sending you a reprint of his article on the treatment of epilepsy and suggests that you read it carefully. Then, with the light derived therefrom, make a thorough examination of your patient, testing the reflexes, examining the spine for areas of tenderness, et cetera, and report your findings.

Were we in your place and the patient refused or were unable to enter a hospital, we should try to alleviate the pelvic condition first, then treat her for epilepsy. Thorough elimination is, of course, essential, and the patient must be very carefully dieted. It is a mistake to have "two strong men hold her down" during her attack. She would be much better off and the spasm would be less severe if a more moderate degree of restraint were employed.

You do not state whether she utters any cry before each spasm or whether she bites her tongue or injures herself in any way. Do not forget the possibility of a hysteric element here.

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QUERY 6397.—"Tumor of Mesentery?" C. S. N., Alabama, writes: "I have a case of what seems to be a tumor of the mesentery in a woman, who is single, thirty years old, and with good family history. She enjoyed good health until two years ago. Then, one day, when, coming home from work in an office, being told that ripe fruit would be good for her, she ate a large amount of fresh peaches. Following this, she was taken with pains along the left side, and this condition continues. I was called after she had had various treatments. I have given her tonics, soda, bromides, compound calcium elixir, sodium cacodylate, and other things, but, seemingly, with slight improvement. She has good elimination, her digestion is fair, and appetite reasonably good. I find nothing in her condition pointing to a different diagnosis, although I may have overlooked some symptoms."

With our very limited knowledge of the conditions existent in your patient, it clearly is impossible to venture intelligent therapeutic comment. If a tumor of the mesentery exists, surgical intervention may be necessary. On the other hand, if by any chance, while eating those fresh peaches, she swallowed a peach-kernel which has lodged in some sacculation of the intestine, gentle massage of the abdomen, high enemata in the knee-chest position, and a few doses of castor-oil might prove remedial; in fact, we should not hesitate to give a high oil enema followed by a quart or quart and a half of water at body-temperature.

Unfortunately, you do not state just *why* she was advised to eat a quantity of ripe fruit, although we assume it was for laxative action. Neither do you state the location of the "pain in the left side" or its character.

It would be an excellent idea, we think, for you to go over the woman very carefully and report your findings; at the same time, sending specimens of feces and urine (4 ounces taken from the mixed 24-hour output, stating total quantity voided) to a good pathologist, for examination. It may also be desirable to make an examination with the patient under an anesthetic in order to secure complete relaxation and eliminate the "defensive" muscular contractions.